

March 17, 2019

Board President and Commissioners,

Gary Herrera, Vice President, ILWU Local 13.

On behalf of myself and the ILWU Local 13. I am asking you remove the Level 1 Coastal Development Permit No. 18-25: APM Terminals.

*Potentially devastating consequences will occur if this permit is approved without time to thoroughly analyze its impact. As you know, a Level 1 Coastal Permit, as defined in the Port Master Plan, is "required for permits that are minor in nature and are determined to have an insignificant impact on the Port or surrounding environment." **However, transitioning the largest terminal on the country's largest port to full automation will have major and significant impacts on the Port, surrounding environment, Local Communities and Global Economy. This Board must consider these impacts.***

Sincerely,



Gary Herrera

TABLE OF ARTICLES

1. **PORT OF LOS ANGELES-NEWS RELEASE**
2. **“CALIFORNIA LEAST TERN” (PORT OF LOS ANGELES/ENVIRONMENT/BIOLOGICAL-RESOURCES)**
3. **“5G HEALTH RISKS TO BE CONSIDERED BY CITY COUNCIL” (PORTLANDTRIBUNE.COM)**
4. **“RADIATION FROM CELLPHONES, WI-FI IS HURTING THE BIRDS AND THE BEES; 5G MAY MAKE IT WORSE” (WWW.NEWSWEEK)**
5. **“ 5G NETWORKS RAISE CHINESE ESPINAGE FEARS:‘IF YOU BUILD IN A BACK DOOR TO IT, IT’S GAME OVER” (WWW.WASHINGTONTIMES.COM)**
6. **“FRIGHTENING FREQUENCES: THE DANGERS OF 5G & WHAT YOU CAN DO ABOUT THEM” (ELUXEMAGAZINE.COM)**
7. **“WHY 5G CELL TOWERS MORE DANGEROUS” (WWW.RADIATIONHEALTHRISKS.COM)**
8. **“WIRELESS RADIATION KILLING MONARCH BUTTERFLIES” (MONTEREY HERALD LETTER)**
9. **“OUR CELLPHONE ADDICTION IS TURNING WIRELESS TECH INTO AN INVISIBLE WEAPON THAT’S DESTROYING WILDLIFE”, (INDEPENDENT MEDIA INSTITUTE –WAKING TIMES)**
10. **“5G RADIATION DANGERS-11 REASON” (WWW.ELECTRICSENSE.COM)**
11. **5G RADIATION DANGERS-11 REASONS TO BE CONCERNED**
12. **SPEED OVER SAFETY: THE PERILOUS 5G NETWORK (4KSHARES)**
13. **LEGISLATION**



NEWS RELEASE

FOR 3rd CONSECUTIVE YEAR, PORT OF LOS ANGELES BREAKS ALL-TIME CARGO RECORD

After Record December, Port Finishes 2018 near 9.5 Million TEUs



SAN PEDRO, Calif. – Jan. 16, 2019 – The Port of Los Angeles moved more cargo in 2018 than any time in its 111-year history, racking up 9,458,749 Twenty-Foot Equivalent Units (TEUs), 1.2 percent more than 2017's record-breaking

year. It is the third consecutive year of record volumes for the nation's #1 gateway for containerized trade and the most cargo moved annually by a Western Hemisphere port.

"Los Angeles is open for business and engaged with the world — and now, we have another record year at the Port of Los Angeles to show for it," said Mayor Eric Garcetti. "Our Port helps make L.A. a global hub for commerce, and it continues to drive our economy forward by creating jobs and expanding opportunity across the City."

"2018 was marked by a robust economy coupled with tariff-induced surges of cargo headed to U.S. retail and manufacturing sectors," said Port of Los Angeles Executive Director Gene Seroka. "These extraordinary volumes highlight the need for continued stakeholder collaboration on methods to maximize supply chain efficiency. Through a number of initiatives, we are focused on both physical and digital infrastructure enhancements that continue to ensure the reliable, safe and efficient conveyance of cargo through our gateway."

In December, the Port processed 903,258 TEUs, the busiest December in the Port's 111-year history and a 15.9 percent jump compared to the previous year. It was the sixth consecutive month of volumes exceeding 800,000 TEUs.

"The ILWU is proud to be the backbone of San Pedro Bay port complex," said Mark Mendoza, President of the International Longshore and Warehouse Union, Local 13. "Day and night, the men and women of the ILWU will continue to work the docks to keep this port complex the number one trade gateway in the United States."

"The Port of Los Angeles continues to be a national leader in cargo volume and innovation," said John McLaurin, President of the Pacific Merchant Shipping Association (PMSA). "These record volumes are a reflection of the dedication and hard work of the Port and all of the supply chain partners."



December imports increased 21.6 percent to 468,906 TEUs. Exports decreased 3.2 percent to 147,965 TEUs. Along with an 18.9 percent rise in empty containers, overall December TEUs totaled 903,258, an increase of 15.9 percent compared to the previous year.

Current and past data container counts for the Port of Los Angeles may be found [here](#).

The Port of Los Angeles is America's premier port and has a strong commitment to developing innovatively strategic and sustainable operations that benefit Southern California's economy and quality of life. North America's leading seaport by container volume and cargo value, the Port of Los Angeles facilitated \$284 billion in trade during 2017. San Pedro Bay port complex operations and commerce facilitate [one in nine jobs](#) in the five-county Southern California region.

More Stories

Media Contact:

(/)

COMMONLY SEARCHED TOPICS

SEARCH HERE →

CALIFORNIA LEAST TERN

[Home \(/\)](#) / [Environment \(/Environment\)](#) / [Biological Resources \(/Environment/Biological-Resources\)](#) / [California Least Tern \(/Environment/Biological-Resources/California-Least-Tern\)](#)

California Least Tern



THE CALIFORNIA LEAST TERN

The endangered California least tern bird species occupies a protected nesting site adjacent to the Port of Los Angeles' largest container terminal on Pier 400. This aerial fish-foraging bird, known as the "least" tern since it is the smallest of the tern species, travels from its wintering grounds in Mexico to Southern California from April through August to nest. It is protected by both the Federal and State Endangered Species Acts and has historically nested in the Los Angeles Harbor area. Through an agreement with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and U.S. Army Corps of Engineers, the Port of Los Angeles maintains, monitors, and protects 15 acres of sand on Pier 400 for the nesting of these indigenous birds. Monitoring of the colony has been in place since 1973.

SITE MONITORING

Monitoring is conducted by licensed and very experienced avian biologists, and managed by Port staff, although, "monitoring" is a limited term because there is much more involved in protecting this species! Every year, long before the least terns arrive, the site is evaluated, a strategy for site management is outlined, and then the work begins. In short, there is vegetation to remove, a chick fence to repair, notifications to prevent flying over the site during nesting, and predator species to relocate. People who work in the area receive training on how to avoid disturbing the birds. During the nesting season nest counts are performed twice per week, other species are managed so they do not damage the tiny least tern eggs and chicks, predators are shooed away, and keen observers keep a look out for the types of fish the least terns are eating.

FONT



SHARE THIS

MORE STORIES

Facebook

Twitter (/#twitter)

Google+

(/#google_plus)

Email (/#email)

LinkedIn

(/#linkedin)

5G health risks to be considered by City Council

Jim Redden Sunday, March 10, 2019

Resolution up for a vote Wednesday calls for more study into previous findings that future technology could increase cancer and other risks in almost everyone in Portland.



PGM FILE PHOTO - A 5G transmitter in Wilsonville.

(<http://pamplinmedia.com/images/artimg/00003635077659-0644.jpg>)

The City Council will consider requesting additional federal studies of the potential harmful health impacts of 5G wireless communication technologies on Wednesday.

The resolution introduced by Mayor Ted Wheeler and Commissioner Chloe Eudaly says some studies have suggested 5G technology could increase cancers in those exposed to it — which would be almost everyone in cities because of the large number of closely spaced "small-cell" antennas required.

"There is evidence to suggest that exposure to radio frequency emissions generated by wireless technologies could contribute to adverse health conditions such as cancer. Wireless companies in the U.S. say they'll have to install about 300,000 new antennas, close to the total number of cell towers built over the past three decades. This substantial increase in cell towers deployed in communities means greater contact with them," reads the resolution to be considered March 13.

Wheeler has spoken out against federal restrictions against cities regulating such technologies. He recently protested a Federal Communications Commission order filed in August requiring cities to accept all applications from telecommunications firms to build new wireless and broadband infrastructure.

Speaking at the U.S. Conference of Mayors winter meeting in Washington DC in late January, Wheeler said, "We need every single mayor who cares about this issue — local control of local assets — to sign on with this. The more the better, obviously."

5G will significantly increase wireless communication capacity and is considered necessary for self-driving vehicles and other advanced technologies. But, according to the resolution, it will greatly increase the human exposure to radio frequency (RF), electromagnetic fields from wireless facilities.

Although the FCC has adopted RF guidelines, the resolution says no federally-mandated RF exposure standards exist, despite studies suggesting that harm to people may occur. In addition, federal law prevents cities from adopting their own restrictions.

ADVERTISING | Continue reading below

(<https://reach.adspmg.com/ck.php?>

oaparams=2__bannerid=8687__zoneid=739__cb=59e472616c__oadest=http%3A%2F%2Fbit.ly%2F2Fbp5E5)

"(F)ederal law preempts state and local governments, including the City of Portland, from considering health concerns in the regulation and placement of wireless facilities, so long as such facilities otherwise comply with applicable federal law," the resolution notes.

Despite that, according to the resolution, "in September 2017, 180 scientists and doctors from 36 countries sent an appeal to the European Commission recommending a moratorium on the roll-out of 5G until potential hazards for human health and the environment had been fully investigated by scientists independent from industry."

Although Portland is so far working \ . . . companies installing 5G technology, th . . . resolution says, "we are requesting the FCC and other relevant federal agencies to revisit and update studies on potential health concerns arising from radio frequency wireless emissions considering 5G technology. Findings from these studies need to be publicly available."

You can read a previous Business Tribune story on the issue here. (<https://portlandtribune.com/but/239-news/417605-320330-city-planning-5g-wireless-infrastructure>)

You can read the resolution here. (<https://www.portlandoregon.gov/auditor/article/714951>)

Sponsored Links

If Your Dog Licks Its Paws (Do This Every Day)

Dr. Marty

If Your Dog Eats Grass (Do This Everyday)

Ultimate Pet Nutrition Nutra Thrive Supplement

If You Have Any Of These 20 Toys Around, You Just Became Rich

EditorChoice.com

Grandpa Worked Over A Decade On Her Sweet 16 Gift. Her Reaction Was Heartbreaking

IcePop

There Is One Protein That Can Restart A Slow Metabolism, And No, It's Not Fish

Gundry MD Proplant Supplements

Pamplin Media Comment Policy

Comments are welcomed and encouraged on this site.

Please read our [Comment Policy](#) before commenting.



17 Comments

Pamplin Media

 Login ▾

 Recommend

 Tweet

 Share

Sort by Best ▾



Join the discussion...

LOG IN WITH

OR SIGN UP WITH DISQUS ?

Name



Pete • 6 days ago

5G is different than 2G/3G/4G. They are mm wavelengths. They have not been safety tested by the telcom industry and the FCC has not updated guidelines in years. The head of the FCC is former Verizon so there is less interest in protecting the public safety and more interest in protecting corporate profit. The telcom is rushing the rollout in what will be a societal experiment. These frequencies are the same as what is used in the US military's Active Denial System weapon. There are international scientific studies done by both government and private organizations that is showing evidence of DNA breakdown and increase risks of cancers. 5G antennas will consist of microsites so expect these antennas to be placed in close proximity to your homes (every few blocks) because mm waves cannot travel far through obstructions like 4G can so 5G antennas will be a community eyesore as well. The EMFs from 5G will be a cumulative effect, much how smoking concerns didn't come out until many decades later. Get informed before you start with the ignorant tin foil jokes. This is a serious health concern. Different countries have already banned certain EMFs from cellular and wifi in schools and other organizations including in the US Firefighters stations prohibiting cell towers due to health concerns.

4 ^ v • Reply • Share ›



Pete → Pete • 6 days ago

Raise awareness: <https://ehtrust.org/scienti...>

2 ^ v • Reply • Share ›



Pete → Pete • 6 days ago

Additional information: <https://www.electrosmogprev...>

1 ^ v • Reply • Share ›



Rich Chever • 6 days ago

I am sure that both the mayor and La Chloe use cellphones--maybe two, since the city provides phones for very important people. They probably have wifi in their homes. They daily walk through self-opening doorways. The world is full of these despicable RF thingies--we're alarmed!

Neither one of these stalwart public servants shows any signs of the many and varied health problems that have been debunked over the years--it's a game of Whack-a-Mole between the alarmists and the people who actually, like really, know about RF radiation. First it was brain cancer; debunked. Now, as a last resort, the medi-alarmists want to delay the new technology until....who knows when. There will always be some "scientist" out there with whacky alarmist stuff to peddle...just look across the Columbia where the nest of anti-vaxxers have done their best to kick off a good old-fashioned epidemic.

Doesn't our City Council have better things to do?

4 ^ v • Reply • Share ›



Wet Hen Rich Chever • 5 days ago

Rich, this 5G is much, much stronger radiation. Please educate yourself.

1 ^ v . Reply . Share >



maxredline Rich Chever • 6 days ago

Public servants? No, public teat-hangers.

2 ^ v . Reply . Share >



Re Rich Chever • 5 days ago

The gov and industry love that word "sensitive" as if there is something wrong with us, but not their poisonous tech. They knew all along. Red pill extraordinaire.

<https://ecfsapi.fcc.gov/fil...>

<https://ecfsapi.fcc.gov/fil...>

<https://ehtrust.org/wp-cont...>

<https://ntrs.nasa.gov/archi...>

<http://thermoguy.com/wp-con...>

<https://www.magdahavas.com/...>

<https://www.nature.com/arti...>

<https://emfrefugee.blogspot...>

<https://ehtrust.org/key-iss...>

see more

^ v . Reply . Share >



Sirena Sedat • 6 days ago

Hurray!

2 ^ v . Reply . Share >

Comments continue after advertisement

Sponsored

The image contains two side-by-side advertisements. The left advertisement is for Nespresso, featuring the brand name at the top, a large '30% OFF ALL MACHINES*' in bold black text, and a 'SHOP NOW' button at the bottom. The right advertisement is for Planet Fitness, with the logo at the top, '\$10 A MONTH' in large yellow and white text, and 'Tons of equipment & more!' below it. Both ads include a close button in the top right corner.



Report ad



Wet Hen • 5 days ago

If the self driving cars don't kill you the 5G radiation will.

1 ^ v • Reply • Share ›



Reza Ganjavi • 5 days ago

BRAVO! www.end5g.com

1 ^ v • Reply • Share ›



Gnuut • 7 days ago

Tinfoil hats, anyone?

3 ^ v • Reply • Share ›



Re → Gnuut • 5 days ago

<https://www.activistpost.co...>

^ v • Reply • Share ›



DD877 • 6 days ago

Keeping Pork-land Third world??/

2 ^ v • Reply • Share ›



Alexandra Catherine • 5 days ago

Bravo to Mayor Wheeler. Section 704 of the 1996 Telecommunications Act should never have been included. For those of you who don't know what this is - Section 704 took away a municipality's rights to consider environmental and health implications in cell tower / wireless facility applications. Wrong on so many levels. As for 5G - this will require small cells every 300-500 feet and mini-cells ARE cell towers. Cell towers don't belong in residential neighborhoods. Don't let the small size fool you, residents will be exposed to far more radiation than they are being exposed to now because 5G is a proximity play. 5G waves don't travel as far, so towers every 300-500 feet is necessary for the equipment to work effectively. But it's not worth it at the expense of exposing EVERYONE to unheard of levels of radiation. Not just radiation, but millimeter wave radiation that has never been tested for safety, that has never been used in cities or residential communities before. There are thousands of peer-reviewed, independent studies in existence that have already definitively, conclusively determined that near-proximity pulsed radiofrequency radiation causes a myriad of biological harms. Telecommunications companies (and the FCC) denying this is fake news under the BS of plausible deniability. We're smarter than that - we've been through this with big tobacco and asbestos. We know how this game is played and we can see through the smoke and mirrors. I'm excited for the city of Portland, I hope this resolution passes (I'm sure it will) and that other cities adopt similar resolutions in quick succession. With the Shotclock Order, the FCC has essentially written itself a "blank check" for wireless companies to run over our communities and right of ways. This level of Federal interference has to stop. Show us that 5G causes no harm...but this will never happen because they can't do it.

1 ^ v • Reply • Share ›



Christopher • 3 days ago

5G, like all the previous iterations of the "Gs" uses microwave frequencies to carry information. The FCC opened up the higher bandwidths, technically medical grade frequencies, above 5 gigahertz for use by telecom. Why is this a problem? Myself and another researcher have shown that microwave radiation in the band we currently use for wireless communication (around 1-2 gigahertz) lowers the voltage of water. We assert that water in the body is the primary source of bioelectricity. Thus, microwave radiation has a degrading effect on the body for the ability to generate bioelectricity.

Most people understand that electricity plays some role in the body: we measure this with things like EKGs, EEGs, etc. Also well know is the prevalence of water in the body: by molecule each cell is roughly 99% water. Recently Dr. Gerald Pollack and his team at the University of Washington found that water has the remarkable ability to generate a voltage. He termed this the exclusion zone of water, where charge separates and a negative voltage potential is found where water meets a hydrophilic surface.

Lower end microwave frequency used for wireless communication degrade the voltage potential in the exclusion zone of water. This degradation of voltage, we believe, is the mechanism wherein EMF (electromagnetic fields) in the microwave range cause biological harm. A lowered cellular voltage leads to a host of different issues, depending on the location in the body and the extent of voltage loss.

[see more](#)

^ v • Reply • Share >

Comments continue after advertisement

Sponsored

[Report ad](#)



CherryAnn1000 • 5 days ago

Doesn't the city council in Portland have more important issues to deal with than 5G? Really?

^ v • Reply • Share >



Re → **CherryAnn1000** • 5 days ago

5G is the next layer of a global health catastrophe in progress. Worse than all the tobacco, DDT, asbestos, lead, thalidomide, etc. combined.

^ v • Reply • Share >

SIGN IN **SUBSCRIBE**



- Search
- U.S.**
- World**
- Business**
- Tech & Science**
- Culture**
- Sports**
- Health**
- Opinion**
- Ndelible**

TECH & SCIENCE

RADIATION FROM CELLPHONES, WI-FI IS HURTING THE BIRDS AND THE BEES; 5G MAY MAKE IT WORSE

BY **DANA DOVEY** ON 5/19/18 AT 9:00 AM EDT



*horse and buggy and into the Model T,
that's not a new notion.*

SHARE       

TECH & SCIENCE

Technology is quite literally destroying nature, with a new report further confirming that electromagnetic radiation from power lines and cell towers can disorientate birds and insects and destroy plant health. The paper warns that as nations switch to 5G this threat could increase.

In the new analysis, [EKLIPSE](#), an EU-funded review body dedicated to policy that may impact biodiversity and the ecosystem, looked over 97 studies on how electromagnetic radiation may affect the environment. It concluded this radiation could indeed pose a potential risk to bird and insect orientation and plant health, [The Telegraph](#) reported.

This is not a new finding, as studies dating back for years have come to the same conclusion. In fact, one study from [2010](#) even suggested that this electromagnetic radiation may be playing a role in the decline of certain animal and insect populations. The radio waves can disrupt the magnetic “compass” that many migrating birds and insects use. The creatures may become disorientated, [AFP](#) reported.



5g may interfere with bird navigation. Migratory birds fly in France.
FRANCOIS NASCIMBENI/AFP/GETTING

The electromagnetic radiation also interrupted the orientation of insects, spiders and mammals, and may even disrupt plant metabolism, [The Telegraph](#) reported.

As a result of this most recent finding, UK charity Buglife urged that plans to install transmitters may have "serious impacts" on the environment, The Telegraph reported. For this reason, it suggests these transmitters not be placed on LED street lamps, which would attract insects and increase their exposure.

5G is a fifth generation wireless technology that transmits data at high speeds. It is used by phone towers to make phone calls, text messages and to browse the internet.

RELATED STORIES

Cellphone Car Charger Lights Entire Car on Fire

California Guidelines Raise Concerns About Cellphones

California Guidelines Raise Concerns About Cellphones

In addition, the charity called for further studying of this threat.

"We apply limits to all types of pollution to protect the habitability of our environment, but as yet, even in Europe, the safe limits of electromagnetic radiation have not been determined, let alone applied," said Matt Shardlow, CEO of Buglife, The Telegraph reported.

In the United States, AT&T plans to be the first to have 5G available, and will launch the network in 12 cities by the end of the year, PC Mag reported.

REQUEST REPRINT, SUBMIT CORRECTION OR VIEW EDITORIAL GUIDELINES

Promoted Links

Ads by Revcontent

New Study Says Avoid Ibuprofen with All Costs

United Naturals

She Was #1 Pole Vaulter then 1 Photo Changed That

Obsev

Barron Trump's IQ Explains So Much About His Odd Personality

StyleGoop

The 20 Richest Actresses in the World Based on Net Worth

POP Hits

Think You Have a High IQ... Can You Pass This History Quiz?

Trendchaser

Remember Them? They're Finally Separated and Look Insane Now

PollHype

5G networks raise Chinese espionage fears: 'If you build in a back door to it, it's game over'



Visitors look at a display for 5G wireless technology from Chinese technology firm Huawei at the PT Expo in Beijing, Wednesday, Sept. 26, 2018. The government-organized event comes amid a mounting tariff war with Washington over Beijing's plans for the ... more >

By Ben Wolfgang - *The Washington Times* - Thursday, January 3, 2019

It's a technology that promises to revolutionize the telecommunications landscape in the U.S. and around the world, but 5G networks also present one of the most complex, geopolitically sensitive national security threats that the country has seen in decades. Military and intelligence insiders say if Washington and Silicon Valley get it wrong, then the nation could be permanently vulnerable to systematic Chinese espionage.

With governments around the world awarding lucrative contracts to build and maintain the powerful next-generation networks, the questions of national interest, technological efficiency and security are coming to a head.

From North America to New Zealand, officials fear China's government, working in concert with leading state-tied telecommunications giants such as Huawei, wants to use the coming global implementation of fifth-generation wireless networks as an opportunity to steal information, eavesdrop and unleash crippling cyberattacks on an unprecedented scale.

The White House, Pentagon and American intelligence agencies are deeply concerned about the threat, but some analysts say they may not fully grasp the depth of the problem.

The deep-seated security vulnerabilities associated with 5G are technical and complex, but at their core is a simple fear that Chinese firms could include in their products covert electronic windows to monitor average people, companies and public officials, and that they could use that ability as a 21st-century weapon.

"If you build in a back door to it, it's game over," said Chris Meserole, a Brookings Institution fellow who specializes in the impact of technology on U.S. foreign policy.

"The fear ultimately is that China monitors the traffic that's passing through American networks, Western networks, and it's recording it ... and sending it back to China, and China has this gold mine of data," he said. "The bigger fear from a military perspective is that China builds in a back door and they selectively use it."

The "amateur thief," he said, "goes and steals your whole wallet. The sophisticated thief steals one credit card and leaves the wallet intact — you don't even notice it until it's too late."

The scale and scope of 5G technology make the threat exponentially greater, analysts say. Just as 3G networks ushered in the smartphone and 4G revolutionized society by facilitating apps such as Uber, 5G will connect users like never before and bring about the fastest, most reliable wireless services in history.

Beyond simply providing faster networks, 5G is expected to bring about wholesale changes to the way Americans live, enabling long-awaited technological advances such as driverless cars, more efficient medical care with greater use of robotics, reduced roadway congestion because of interconnected traffic lights, more sophisticated video game networks, and the ability to control virtually any device or appliance in the home with a smartphone.

"5G will have an impact similar to the introduction of electricity to the car, affecting entire economies and benefiting entire societies," Qualcomm CEO Steve Mollenkopf said two years ago when explaining the massive changes 5G will bring.

New dangers

The technological explosion, while a blessing for businesses and consumers, also offers far more openings for cyberattacks or other disruptions. The Trump administration has taken steps to prohibit the U.S. government and its contractors from using most Chinese-made equipment, but the sheer scale and interconnectedness of wireless systems could leave federal agencies and other official channels vulnerable.

Even if the U.S. avoids all Chinese products during the rollout of 5G, sensitive American information could fall into Chinese hands unless virtually every other nation adopts a similar ban. That seems virtually impossible with Chinese companies such as Huawei and ZTE Corp. ensconced in markets around the globe and rivaling top Western companies in their sophistication of 5G technology.

Huawei, the world's biggest network equipment maker ahead of Ericsson and Nokia, has repeatedly insisted that the government in Beijing has no influence over its operations, although that has not eased international wariness.

Each sector of the U.S. government and economy could be vulnerable, but nowhere is the threat more urgent than inside the Pentagon.

From satellites to missile systems to a vast computer network spread around the globe, the U.S. military has become so dependent on technology that it is a prime target, especially in the era of 5G.

"If China sets the standard for 5G, our military is so reliant on some of those systems that it would be very, very bad for us," Eric S. Edelman, undersecretary of defense for policy during the George W. Bush administration, said last month at the annual Texas National Security Forum, where concerns over the implementation of 5G were at the top of the agenda for military and intelligence insiders.

The ways 5G could be wielded as a weapon are virtually endless.

Cyberhacking and data theft are the most obvious, but security analysts say that if Beijing or its state-affiliated telecommunications companies find any way into U.S. 5G systems, then the attacks could be much more subtle, difficult to anticipate and nearly impossible to prevent.

"If somebody were able to hack a device and turn up everybody's air conditioning in New York City by 3 degrees at the same time, you would knock out the power grid in New York completely," Declan Ganley, chairman and CEO of the U.S.

communications company Rivada Networks, told the Center for Security Policy in a recent radio interview. "And you could keep doing that and cause massive knock-on or rolling blackouts."

There is ample evidence that China is highly motivated to — at the very least — exploit its commercial technology advances to infiltrate U.S. companies. In October, Bloomberg reported that leading American firms such as Amazon and Apple were compromised by small Chinese computer chips implanted in pieces of their hardware.

Specialists say those methods are increasingly easy to detect.

"That's actually pretty easy to guard against. You can create a way of scanning for that pretty easily," Mr. Meserole said. "What's harder to guard against aren't hardware attacks. It's more software" attacks.

The challenge for companies and for the U.S. government as a whole, Mr. Meserole said, is to ensure that the ability to conduct software attacks is stopped before 5G networks are built and implemented early next decade.

"In the early 2020s, there's going to be a massive build-out across pretty much every city globally," he said. "Once it's built out, you're not going to go back and rebuild it."

China vs. the world

There is little debate that Chinese technology remains at the forefront of 5G development, making it difficult — though certainly not impossible — for nations to deploy large-scale wireless networks without relying on products from China. Federal communications officials have conceded in recent months that the U.S. regulatory framework has made it tougher for the American system to keep pace with China's more efficient state-run, top-down approach.

"So long as we have multiple bites of the regulatory apple and the regulatory uncertainty that flows from that, we will always be behind those countries that have established a national policy on 5G," Federal Communications Commission Chairman Ajit Pai told a Senate panel last summer.

Specialists say there is little debate that Chinese companies are leading the way.

"The best devices in 5G so far, those are produced by a geopolitical rival of the United States — China," Mr. Meserole said.

But there is growing pushback around the world against China and its leading telecommunications companies, Huawei and ZTE.

President Trump is eyeing an emergency executive order that would prohibit all U.S. companies from using any equipment made by ZTE or Huawei, Reuters reported late last month. The president has signed a bill barring the federal government and its contractors from using products made by either of those companies.

Last month, Huawei's chief financial officer, Meng Wanzhou, was arrested in Vancouver at the request of the Trump administration. She was accused of covering up international economic sanctions on Iran.

The incident made waves around the world and threatened to upend broader U.S.-China trade negotiations. But it also put Huawei under a newfound spotlight as much of the world seems to be reaching a consensus that the firm represents a serious danger.

In November, New Zealand cited security concerns when it barred major mobile companies from using Huawei equipment in their 5G upgrades. Australia has implemented a similar ban.

British telecommunications giant BT announced last month that Huawei would be blocked from providing technology for the United Kingdom's core 5G network, although it will be allowed to bid on some less-sensitive infrastructure contracts.

The government in Beijing has reacted angrily to moves to restrict its leading telecommunications companies as it criticized the decision in New Zealand.

"The economic and trade cooperation between China and New Zealand is mutually beneficial in nature," Foreign Ministry spokesman Geng Shuang said at a news conference just after the announcement. "We hope New Zealand will provide a level playing field for Chinese enterprises' operations there and do something conducive for mutual trust and cooperation."

The state-controlled Global Times newspaper in an editorial this week compared the campaign against Huawei to what it said was a larger effort by the U.S. and other nations to contain China's rise to economic superpower status.

“Anxiety is flourishing in Western nations that the day will soon come for China to replace U.S. leadership,” the publication said. “In their eyes, China is getting too big, too strong and ready to challenge their status. Yet pursuing global leadership is not on Beijing’s to-do list, not before and not now.”

American lawmakers are pushing other key allies — with which the U.S. shares intelligence and classified material — to follow suit and ban all Huawei and ZTE products. In October, Sen. Mark R. Warner, Virginia Democrat, and Sen. Marco Rubio, Florida Republican, sent a letter to Canadian Prime Minister Justin Trudeau, urging him to keep Canada’s 5G expansion free from Chinese equipment.

“As you are aware, Huawei is not a normal private-sector company. There is ample evidence to suggest that no major Chinese company is independent of the Chinese government and Communist Party — and Huawei, which China’s government and military tout as a ‘national champion,’ is no exception,” they wrote.

The silver lining to the concerns over 5G, some analysts say, is that the U.S. and its allies seem keenly aware of the dangers long before the technology hits the market. That awareness stands in contrast to the failure to anticipate the dangers of election meddling via social media or other unique 21st-century threats.

“This time, we can see it coming,” Mr. Meserole said. “We’re going into this with eyes wide open.”

Copyright © 2019 The Washington Times, LLC. Click here for reprint permission.

The Washington Times Comment Policy

The Washington Times welcomes your comments on Spot.im, our third-party provider. Please read our Comment Policy before commenting.

Popular In the Community



Sponsored

NEW ZEALAND
WELCOMES JACINDA...

NEW MEXICO
DEMOCRATS SINK...



PurpleBucket
8h



TUSK
1d

ELUXE MAGAZINE

ARTICLES MAGAZINE

FRIGHTENING FREQUENCIES: THE DANGERS OF 5G & WHAT YOU CAN DO ABOUT THEM



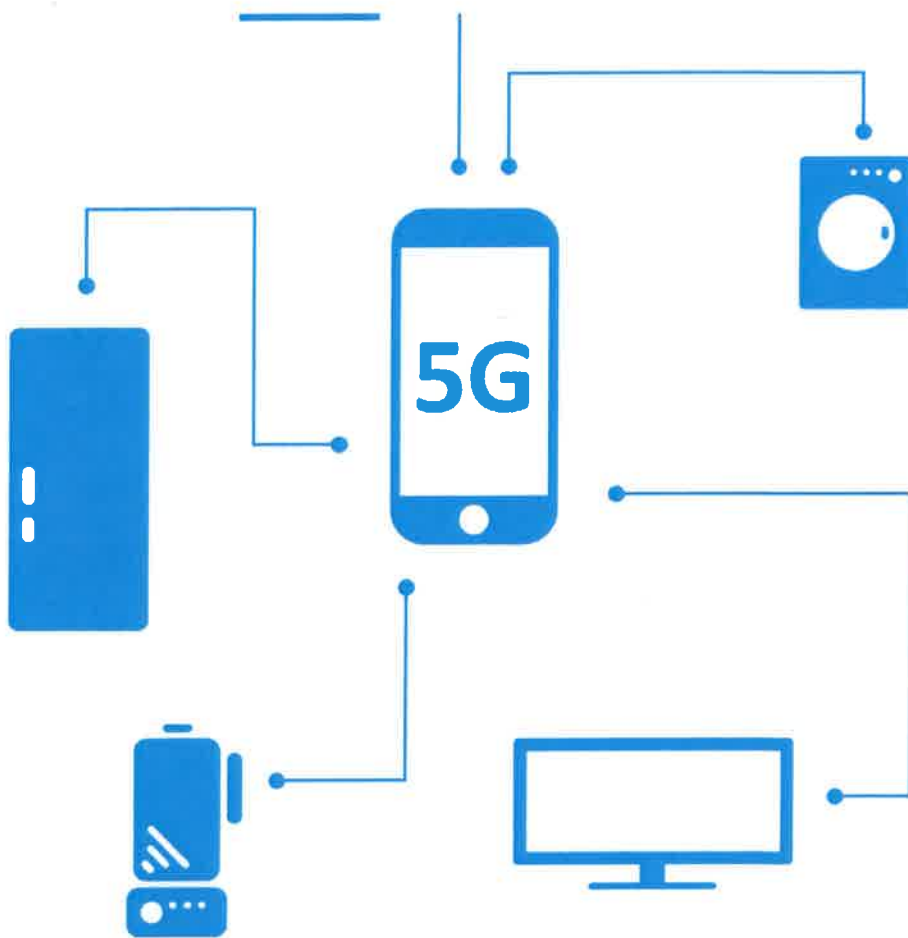
By Jody McCutcheon





As the old saying goes, give us an inch and inevitably we'll want a mile. And certainly, this sentiment is true with technology.

Who doesn't want faster, bigger (or smaller), more efficient? Take wireless mobile telecommunications. Our current broadband cellular network platform, 4G (or fourth generation), allows us to transmit data faster than 3G and everything that preceded. We can access information faster now than ever before in history. What more could we want? Oh, yes, transmission speeds powerful enough to accommodate the (rather horrifying) so-called Internet of Things. Which brings us to 5G.

Until now, mobile broadband networks have been designed to meet the needs of *people*. But **5G has been created with machines' needs in mind**, offering low-latency, high-efficiency data transfer. It achieves this by breaking data down into smaller packages, allowing for faster transmission times. Whereas 4G has a fifty-millisecond delay, 5G data transfer will offer a mere one-millisecond delay—we humans won't notice the difference, but it will permit machines to achieve near-seamless communication. Which in itself may open a whole Pandora's box of trouble for us – and our planet.

We use cookies to improve your experience. By continuing to use this site, you accept the use of cookies. [Privacy Policy](#)



-  [How Toxic Black Hair Products Are Hurting Women's Health](#)
-  [8 Surprising Tips for Better Breast Health](#)
-  [Plastic Free Periods: 5 Ways To Have A Greener Period](#)
-  [A Shot in the Dark? The Dangers of the HPV Vaccine](#)
-  [Ladies Who Launch: Meet The Women Ruling The Natural Beauty World](#)
-  [Feminism in Fashion: Clothing By Women For Women In Need](#)

More bandwidth – more dangers of 5G

Let's start with some basic background on 5G technology. Faster processing speeds require more bandwidth, yet our current frequency bandwidths are quickly becoming saturated. The idea behind 5G is to use untapped bandwidth of the extremely high-frequency millimeter wave (MMW), between 30GHz and 300GHz, in addition to some lower and mid-range frequencies.

High-frequency MMWs travel a short distance. Furthermore, they don't travel well through buildings and tend to be absorbed by rain and plants, leading to signal interference. Thus, the necessary infrastructure would require many smaller, barely noticeable cell towers situated closer together, with more input and output ports than there are on the much larger, easier to see 4G towers. This would likely result in wireless antennas every few feet, on every lamp post and utility pole in your neighbourhood.

Here are some numbers to put things into perspective: as of 2015, there were 308,000 wireless antennas on cell towers and buildings. That's double the 2002 number. Yet 5G would require exponentially more, smaller ones, placed much closer together, with each emitting bursts of radiofrequency radiation (RFR)—granted, at levels much lower than that of today's 4G cell towers—that will be much harder to avoid because these towers will be ubiquitous. If we could see the RFR, it would look like a smog that's everywhere, all the time.

[The Sustainable Sisterhood! Women Friendly Fashion Brands](#)

[Our 20 Sexiest Vegan Women](#)

[Fab, Female Foodies: 10 Women Changing The Way We Eat](#)

[By Women, for Women: Why Female Fashion Designers Rule](#)

MOST POPULAR

Frightening Frequencies: The

12 of the Best Natural Hair Dyes

12 Honest News Sites Way Better Than Anything in the Mainstream Media

How To Wear Streetwear Consciously: An Adult's Guide

9 Natural Alternatives to Botox (and other Salon Treatments)

Serious health concerns

First, it's important to know that in 2011, the World Health Organization's International Agency for Research on Cancer classified RFR as a potential *2B* carcinogen and specified that the use of mobile phones could lead to specific forms of brain tumors.

Many studies have associated low-level RFR exposure with a litany of health effects, including:

- DNA single and double-strand breaks (which leads to cancer)
- oxidative damage (which leads to tissue deterioration and premature ageing)
- disruption of cell metabolism
- increased blood-brain barrier permeability
- melatonin reduction (leading to insomnia and increasing cancer risks)
- disruption of brain glucose metabolism
- generation of stress proteins (leading to myriad diseases)

As mentioned, the new 5G technology utilizes higher-frequency MMW bands, which give off the same dose of radiation as airport scanners. **The effects of this radiation on public health have yet to undergo the rigours of long-term testing.** Adoption of 5G will mean more signals carrying more energy through the high-frequency spectrum, with more transmitters located closer to people's homes and workplaces—basically a lot more (and more potent) RFR flying around us. It's no wonder that apprehension exists over potential risks, to both human and environmental health.

Perhaps the strongest concern involves adverse effects of MMWs on human skin. This letter to the Federal



Perhaps the strongest concern involves adverse effects of MMWs on human skin. This letter to the Federal

We use cookies to improve your experience. By continuing to use this site, you accept the use of cookies. [Privacy Policy](#)

MMW's violate this condition.

Furthermore, the sweat ducts in the skin's upper layer act like helical antennas, which are specialized antennas constructed specifically to respond to electromagnetic fields. With millions of sweat ducts, and 5G's increased RFR needs, it stands to reason that **our bodies will become far more conductive to this radiation**. The full ramifications of this fact are presently unclear, especially for more vulnerable members of the public (e.g., babies, pregnant women, the elderly), but this technology

Furthermore, MMWs may cause our pain receptors to flare up in recognition of the waves as damaging stimuli. Consider that the US Department of Defense already uses a crowd-dispersal method called the **Active Denial System**, in which MMWs are directed at crowds to make their skin feel like it's burning, and also has the ability to basically microwave populations to death from afar with this technology if they choose to do so. And the telecommunications industry wants to *fill our atmosphere* with MMWs?

POLL QUESTION

What do you think is the biggest issue facing women today?

- equality in the workplace
- lack of affordable childcare
- pressure to conform to body ideals
- domestic violence and rape

Vote

View Results

Other distressing research

Unfortunately, innocent animals have already been the victims of testing to see MMW's effects on living cells. Extrapolating the results from animal testing to humans isn't straightforward, but the results nonetheless raise some serious red flags. Perhaps most significantly, a US National Toxicology Program study noted that male rats exposed to RFR for nine hours a day over two years developed rare forms of tumours in the brain and heart, and **rats of both sexes developed DNA damage**.

The researchers noted that the increased risk to the rats was relatively small; but if these findings translate to

obliviousness to the connection between smoking and lung cancer.

Other animal research worldwide illustrates how microwave radiation in general and MMW's in particular can damage the eyes and immune system, cell growth rate, even bacterial resistance. An experiment at the Medical Research Institute of Kanazawa Medical University showed that 60GHz millimeter-wave antennas produce thermal injuries in rabbit eyes, with thermal effects reaching below the eye's surface. This study, meanwhile, suggests low-level MMW's caused lens opacity—a precursor to cataracts—in rats' eyes. A Chinese study demonstrated that eight hours' of microwave radiation damaged rabbits' lens epithelial cells. A Pakistan study concluded that exposure to mobile phone EMF prevented chicken embryo retinal cells from properly differentiating.

This Russian study revealed that exposing healthy mice to low-intensity, extremely high-frequency electromagnetic radiation **severely compromised their immune systems**. And a 2010 Armenian study concluded that low-intensity MMW's not only depressed the growth of E. coli and other bacteria, but also changed certain properties and activity levels of the cells. The same Armenian study noted that MMW interaction with bacteria **could lead to antibiotic resistance**—distressing news, considering immunity to bacteria is already compromised due to the overuse of antibiotics.

Again, if these findings translate to humans, our rampant cellphone use would likely cause profound, adverse health effects; an increase in MMW's as more bandwidth is introduced could further complicate the matter. But what's also important to note here is that 5G technologies will not only have a profound impact on human health, but on the health of all living organisms it touches, including plants, as we shall see.

exhibited symptoms of necrosis, while another Armenian study suggested low-intensity MMW's cause "peroxidase isoenzyme spectrum changes"—basically a stress response that damages cells—in wheat shoots. Plant irradiation is bad news for the planet's flora, but it's bad news for us, too: **it could contaminate our food supply.**

Second, the 5G infrastructure would **pose a threat to our planet's atmosphere.** Network implementation will require the deployment of many, short-lifespan satellites via suborbital rockets propelled by hydrocarbon rocket engines. According to this 2010 California study, launching too many of these babies will vomit enough black carbon into the atmosphere to pollute global atmospheric conditions, affecting distribution of ozone and temperature. Worse, solid-state rocket exhaust contains chlorine, an ozone-destroying chemical. How can any government seriously concerned about climate change allow for this?

Third, 5G will potentially **threaten natural ecosystems.** According to several reports over the last two decades—some of which are summarized here—low-level, non-ionizing microwave radiation affects bird and bee health. It drives birds from their nests and causes plume deterioration, locomotion problems, reduced survivorship and death. And bee populations suffer from reduced egg-laying abilities of queen bees and smaller colony sizes. More evidence of ecosystem disruption comes from this 2012 meta-study, which indicates that 593 of 919 research studies suggest that RFR adversely affects plants, animals and humans.

It bears repeating: **5G is bad news for all living creatures and the planet we share.**

Beware the propaganda deluge

Despite being fully aware of all these unsettling results, threats and concerns, **the US corporatocracy continues**

We use cookies to improve your experience. By continuing to use this site, you accept the use of cookies. [Privacy Policy](#)

low-, mid- and high-frequency spectrums, without even mentioning a single word about the dangers.

They're going to sell this to us as 'faster browsing speeds' – but the truth is, you'll barely even notice the difference. They're going to call anyone who protests against 5G a 'Luddite' or 'technophobe'. But why such a willingness to embrace another new technology – even though it carries serious risks and brings spurious benefits? Why not heed the lessons learned from killer products like asbestos, tobacco and leaded gasoline?

Because a tiny percentage of people will gain an awful lot of money, is one reason. And because companies and governments will be given unprecedented amounts of power over civilians is the other.

All isn't doom and gloom, though. At least one US politician is maintaining some level-headedness: in October, California Governor Jerry Brown stopped legislation that would have allowed the telecom industry to inundate the state with mini-towers. Brown's bold actions have permitted localities a say in where and how many cell towers are placed.

The state of Hawaii has stopped 5G and smart meters by collectively threatening to charge every person who installed such meters with liability for any health problems residents may suffer. Moreover, 180 scientists have started a petition to warn of 5G potential health effects. Maybe these actions will afford more time for additional studies and data collection. Just as importantly, maybe they'll cause other politicians and figureheads to reflect on what they've been pushing for.

Take action

In the meantime, we as individuals must do *everything we can* to protect ourselves. **Here's what you can do:**

- Understand EMFs and their behaviours. Get a good quality radiation detector to know whether or not you're near high levels of EMFs.
- Protect yourself with an EMF Shield to mark and protect you from hotspots. Try a patented product that neutralizes the harmful effects of mobile phones and other EMF emitting devices on humans.
- Whenever possible, limit your exposure: use an anti-radiation headset or speaker mode while talking on a

IPA  ION PROTECTION ITE... WIFI RADIATION PROTECTION ITEMS CEL

([HTTPS://WWW.RADIATIONHEALTHRISKS.COM](https://www.radiationhealthrisks.com))



Why 5G Cell Towers Are More Dangerous

All cell towers emit Radio Frequency (RF) Radiation. This is what makes them dangerous. Plans to transition to the new 5G around the world is already underway. Soon every city will be retrofitted with this technology. Mini cell stations will be placed all throughout our neighborhoods and cities. They will be installed on the sides or tops of buildings and on street light poles.

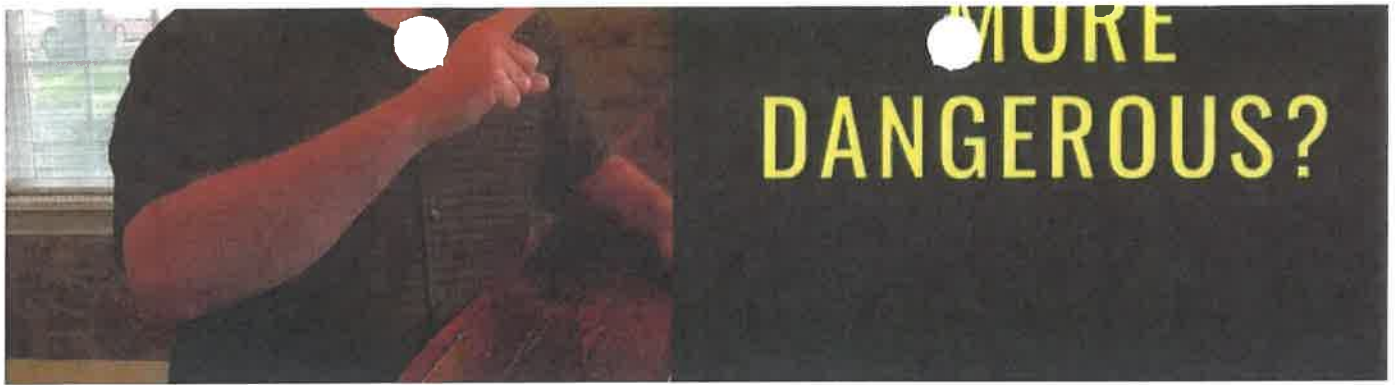
5G cell towers are more dangerous than other cell towers for two main reasons. First, compared to earlier versions, 5G is ultra high frequency and ultra high intensity. 1G, 2G, 3G and 4G use between 1 to 5 gigahertz frequency. 5G uses between 24 to 90 gigahertz frequency. Within the RF Radiation portion of the electromagnetic spectrum, the higher the frequency the more dangerous it is to living organisms.

Second, the shorter length millimeter waves (MMW) used in 5G do not travel as far or through objects. This means with our current number of cell towers the cell signal will not be reliable. To compensate many more mini cell towers must be installed. It is estimated that they will need a mini cell tower every 2 to 8 houses. This will greatly increase our exposure.

With RF Radiation, how close the source is to our physical bodies, is more important than the power level (or wattage) of the radiation. RF Radiation dissipates with distance. In other words, a low powered exposure right next to someone, is more dangerous than a more powerful exposure a long ways away. Also the longer the exposure time is, the more dangerous it is. 5G will be the worst of both worlds. We will have more sources around us, and closer to us. And they will be more powerful and continuous emissions.

In the below video I explain in a bit more detail why 5G is more dangerous than previous technologies. I apologize for looking so beat in this video. I really should not have tried to do a video when I was so tired. This is a video I will be re-doing. However the information is very good and super important. It is a short video and very much worth watching.





RF Radiation Dangers

There have been hundreds of peer reviewed scientific studies done on RF Radiation linking it to health problems such as cancer, DNA damage (especially in fetuses within the 1st 100 days after conception), and sterility in men. And even the World Health Organization classified RF Radiation as a possible “carcinogenic”, meaning “cancer causing”, in 2011. To research some of the actual peer reviewed scientific studies, see the “[Scientific Studies](https://www.radiationhealthrisks.com/scientific-studies/) (<https://www.radiationhealthrisks.com/scientific-studies/>)” page of this website. We will also go over a few of these studies below in this article.

Mini 5G Cell Tower In Your Home

Many people do not realize that they already have a mini cell tower emitting high levels of RF Radiation in their homes and offices right now. Some even have a 5G mini cell tower. We call them WiFi routers. Just like a cell tower, a WiFi router emits at full power 24 hours a day 7 days a week, or as long as you have it turned on. It’s range includes your entire home and beyond. It’s radiation is the exact same RF Radiation that a cell tower emits, or that your microwave oven uses to cook your food.

For example, my WiFi router is a Netgear 5 GHz router that works both at the 5 GHz and 2.4 GHz frequencies. A microwave oven uses 2.45 GHz frequency to cook food. The new 5G WiFi routers that are available now use the 60 GHz, 5 GHz and the 2.4 GHz frequencies. So having one of those routers is really like having a 5G mini cell tower inside of your home.



WIFI ROUTER IN A WIFI
ROUTER GUARD

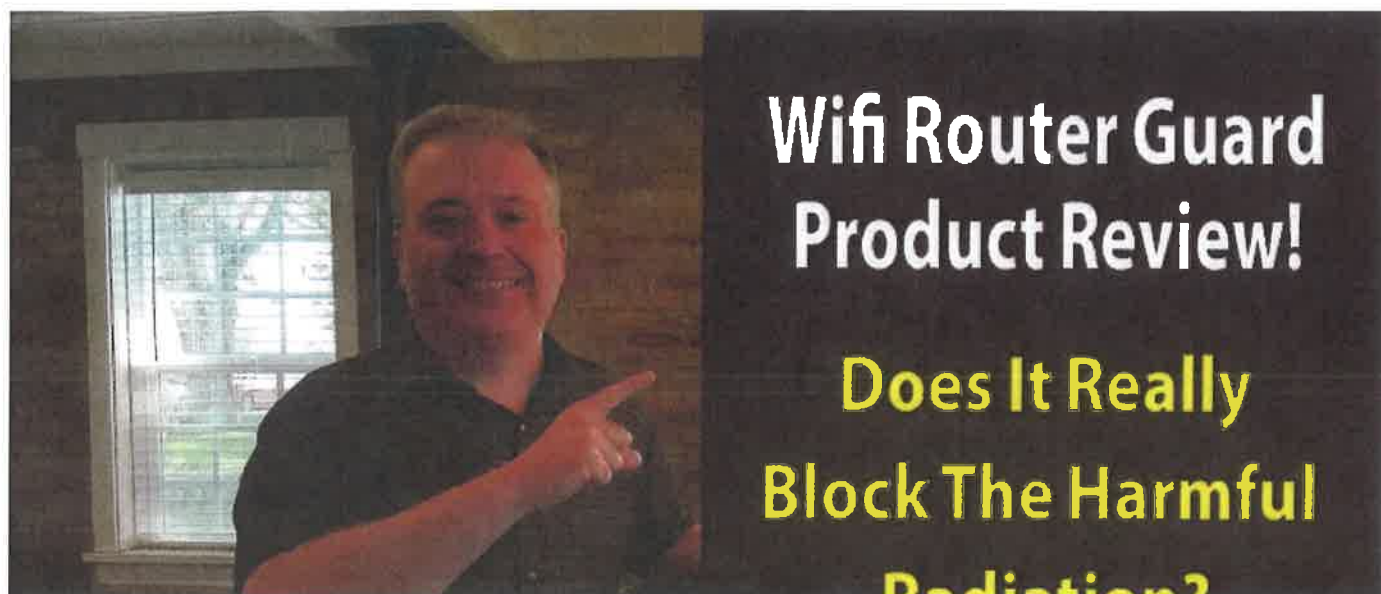
WiFi Router Guard

It is possible to protect yourself from the RF Radiation emitted by your WiFi router. In the picture to the left you can see something called a Wifi Router Guard

(<https://www.radiationhealthrisks.com/wifi-radiation-protection-items/>). By putting your WiFi router in one of these it will block

between 90% and 95% of the RF Radiation they emit. And the amazing part is you will still be able to use the WiFi. In my case our WiFi does not seem slow anywhere in our 3 bedroom home.

In the below video I measure the amount of RF Radiation emitted by my 5 GHz Netgear WiFi router. Then I place it in a Wifi Router Guard and test it again so you can see how much RF Radiation it blocks. It is a short video but definitely worth watching.



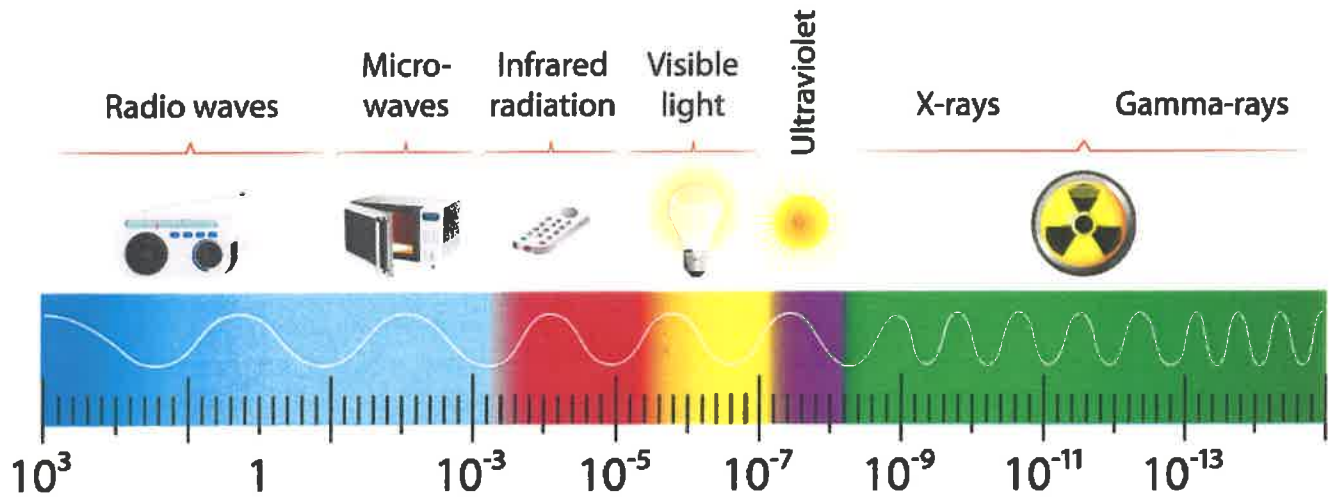


If you don't have the ability or resources to hard wire internet through your house, or if for some reason you must have WiFi, a WiFi Router Guard is a very effective solution. For more information on the WiFi Router Guard click this link **Wifi Router Guard** (<https://www.radiationhealthrisks.com/wifi-radiation-protection-items/>). Also for more information about other RF Radiation dangers inside your home, please see my article "[The 7 Worst Radiation Dangers in Your Home](https://www.radiationhealthrisks.com/)". (<https://www.radiationhealthrisks.com/>)

Electromagnetic Radiation

In the chart below you see what is called the "electromagnetic spectrum". The "Radio waves" and "Microwaves" part of the spectrum is what is referred to as RF Radiation. So microwaves are just a higher frequency radio wave. And remember that within the RF Radiation part of the electromagnetic spectrum, the higher the frequency the more dangerous the waves are to living organisms. (This is not the case in the infrared and visible light portions of the spectrum.)

THE ELECTROMAGNETIC SPECTRUM



RF Radiation Scientific Studies

In Germany, researchers studied 1000 residents who lived in close proximity to two cell phone towers for about 10 years. According to the study, during the last five years of the observations, researchers discovered neighbors living within 400 meters of the cell towers were diagnosed with cancer at a rate that was three times higher than those who lived much further away.

Another frightening study in 1994, well before 3G, 4G and 5G, links significant health problems with people living in a London apartment building with a cell phone mast on the roof. In this study, the cancer rate of those living on the top floor of the apartment building—the closet to the tower, had a cancer rate of 10 times the average in England.

If that isn't enough to convince you there is a significant link between cell phone towers and health problems consider a recent study in Italy. In March 2018, the researchers at the world-renowned Ramazzini Institute released the shocking results of a large-scale study of lab animals exposed to cell tower radiation over a lifetime.

“The Ramazzini study exposed 2448 Sprague-Dawley rats from prenatal life until their natural death to “environmental” cell tower radiation for 19 hours per day. RF exposures mimicked base station emissions like those from cell tower antennas, and exposure levels were far less than those used in the NTP studies of cell phone radiation.”- ehtrust.com

NTP refers to the National Toxicology Program study that recently linked cell phone radiation to heart cancer in male rats. The Ramazzini study is the first to complete a study of this scale, over a significant period of time. Together, the studies make a strong argument for more guidelines and standards to protect public health. Health experts from around the world are weighing in on the significance of the findings and urging the World Health Organization to act.

“This study raises concerns that simply living close to a cell tower will pose threats to human health. Governments need to take measures to reduce exposures from cell tower emissions. Cell towers should not be near schools, hospitals or people’s homes. Public health agencies need to educate the public on how to reduce exposure from all sources of wireless radiofrequency radiation- be it from cell towers or cell phones or Wi-Fi in schools,” said Dr. David Carpenter, former Dean of the School of Public Health and the University of Albany.

“This is particularly urgent because current plans to place small 5G cell towers about every 300 meters in every street across the country. These 5G “small cell’ antennas will result in continuous exposure to everyone living nearby and everyone walking down the street. The increased exposures will increase the risk of cancer and other diseases such as electro-hypersensitivity,” said Dr. Carpenter.

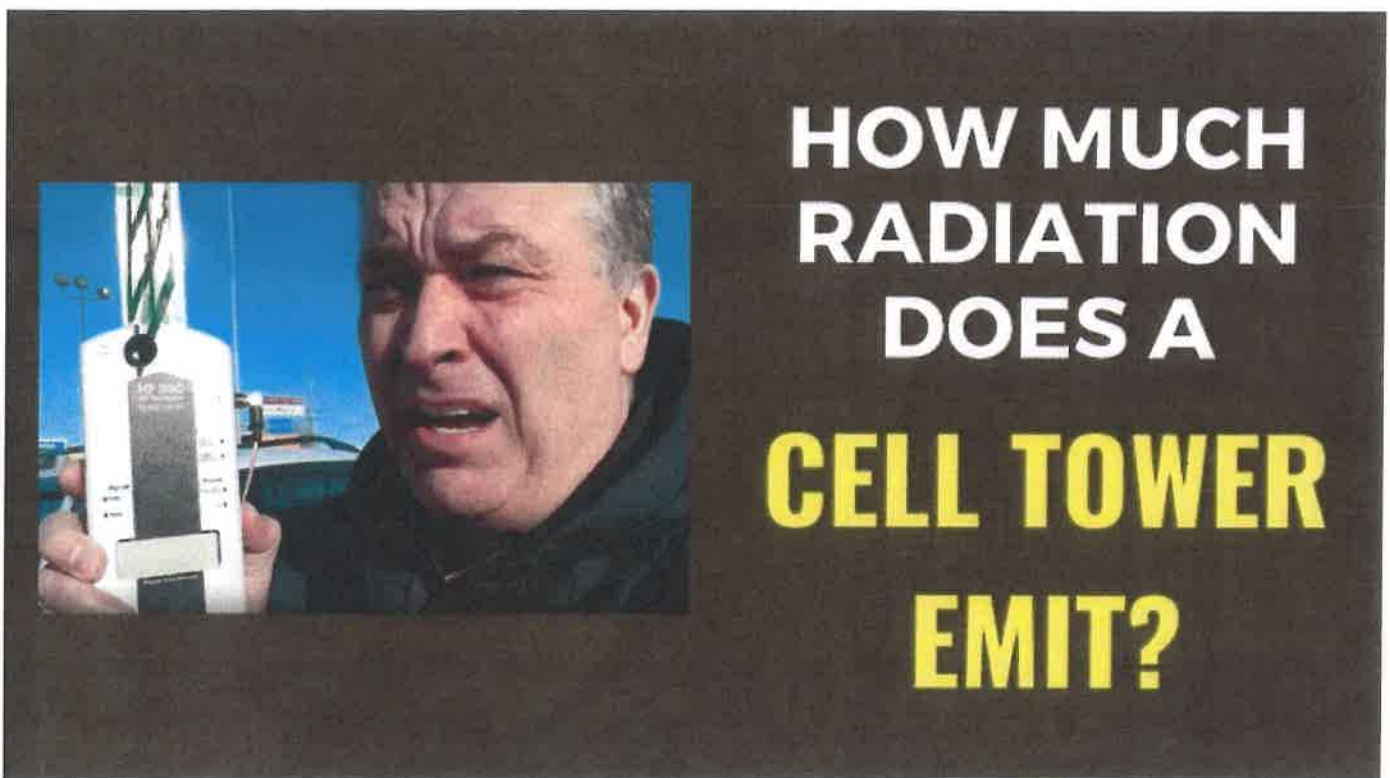
The risk is very real. As Dr. Carpenter indicated, public health is at risk with plans for more and more smaller towers to go up on every street corner around the world.

According to experts, doctors and researchers, radiation has the power to change our bodies on the cellular level. These changes, as supported in several studies, create a perfect environment for cancer and other ailments to take over inside our body.

Other studies link cell phone and cell tower radiation to memory loss, headaches, changes in vision and mood, sleep disorders and leukemia. The rollout of 5G and the infrastructure to support it will only increase our risk of suffering major health issues down the road.

Cell Tower Radiation Measured

In the below video I am standing next to an office building that just had a huge cell tower built right next to it. From the office building I measure how much RF Radiation the cell tower is raining down upon the office building. I just cannot believe they build these things so close to people.



See also “[Is 5G Safe or Dangerous? Here are the Facts](https://www.radiationhealthrisks.com/is-5g-safe-or-dangerous/)”
(<https://www.radiationhealthrisks.com/is-5g-safe-or-dangerous/>).”

5G: What Do The Studies Say?

As companies prepare to make 5G a reality, many doctors and scientists believe the technology will be a “massive public health experiment.”

According to Dr. Joel Moskowitz, a public health professor at the University of California, the increase in mini-cell towers across towns and cities is only part of the concern. Dr. Moskowitz says the lower frequency millimeter waves used in 5G could cause major skin, eye, and nervous system problems.

“The deployment of 5G, or fifth generation cellular technology, constitutes a massive experiment on the health of all species... Because MMWs are weaker than microwaves, they are predominantly absorbed by the skin, meaning their distribution is quite focused there. Since skin contains capillaries and nerve endings, MMW bio-effects may be transmitted through molecular mechanisms by the skin or through the nervous system,” said Dr. Moskowitz.

Dr. Moskowitz also believes that MMV can make some pathogens resistant to antibiotics.

Dr. Moskowitz is not alone in his concern about 5G. Dr. Yael Stein from Jerusalem’s Hebrew University recently wrote a letter to the Federal Communications Commission outlining his major concerns about 5G, MMV and how it could impact human skin.

Dr. Stein argues the human skin has the ability to absorb more than 90% of microwave radiation and will cause major problems from head to toe- especially for the vulnerable such as kids, elderly and pregnant women.

MMVs are also believed to cause physical pain. A recent article in Eluxe Magazine takes a deeper look at the issue. According to the article, MMVs could cause pain receptors to flare up in the human body, and cause great damage to our eyes, cell growth and compromise our immune system.

In fact, the U.S. Government currently uses MMV energy as a non-lethal weapon. This weapon is direct and more intense than the MMVs from a 5G network, however, it's similar and concerning. According to the U.S Department of Defense, the active denial system creates a focused MMV beam that is capable of penetrating the skin, which can create a burning or a stinging sensation.

Some experts even argue 5G will have a devastating impact on our environment as well. A 2010 linked aspen leaf damage to MMV exposure. Some researchers also found MMV's can cause cell damage in wheat plants, impact wildlife and affect our atmosphere.

Only time will tell how the 5G network will impact our health and the environment. We know existing cell towers are dangerous and with plans to build thousands, if not millions more- it could become very interesting. It's clear though, MMVs are not safe for the general public- especially considering we will be exposed everywhere we go, even at home.

Ways to Reduce Exposure to 5G

5G is expected to be ready to go by 2020 so you have plenty of time to prepare and make plans to reduce your exposure to MMVs and other cell towers. Because 5G towers will be everywhere it will be difficult to avoid all exposure, so you'll have to take care of your immune system and make healthy choices.

Boosting your immune system with natural fruits and vegetables is a great way to keep your cells healthy and keep diseases at bay. In addition to making healthy food choices, you can take several precautions around your home.

Some experts believe the best way to keep cell tower radiation from penetrating your home is to create a highly conductive enclosure around your home. So, what does this mean? It means first measuring the levels of radiation with HF35C meter. This meter will give you various levels throughout your home and determine what areas you need to focus on first. Right now, there are various window coverings, paints that will keep radiation from penetrating your home.

Many doctors suggest keeping your distance from the cell towers in question. This could be very hard to do given these 5G towers will be on every corner on every building. Unless you never leave the house, I don't see this as being a realistic expectation.

I'm hoping there will be an app or map listing all the cell phone towers in every neighborhood, in every city across the world. This would certainly make it easier to know where the new 5G towers are located and how to avoid them when necessary. This information would be helpful to those who are exceptionally vulnerable to cell tower radiation such as children, infants, elderly and pregnant women.

Reducing Radiation In Your Home

While you can't control where the cell towers go, you can control how and when you use your own cell phone. By limiting your time on your phone and using radiation blocking cases and shielding headsets, you can greatly reduce your exposure to cell phone radiation. Every little bit helps. Please see also our article entitled "[Why Are 5 GHz WiFi Routers More Dangerous?](https://www.radiationhealthrisks.com/why-5-ghz-wifi-routers-dangerous/) (<https://www.radiationhealthrisks.com/why-5-ghz-wifi-routers-dangerous/>)"

Also, if you have an office make sure you turn off your Wi-Fi router when you're not using it. And keep your cell phone out of your room at night. Various studies link cell phone radiation to disruptive sleep patterns. When you don't sleep well, it can throw off your entire day. By leaving your cell phone out of your room at night, you'll never have to count sheep again.

Take a closer look at your meter outside your house. Many power companies are switching to smart meters. These meters take the guesswork out of how much energy you are using. Smart meters wirelessly transmit data constantly throughout the day, giving the power companies real-time information about your energy consumption. Smart meters take the place of meter readers. Smart meters, however, transmit harmful levels of radiation. If you can, get a smart meter guard to protect you and your family from harmful radiation. You can purchase a smart meter guard for your router and cell phone for under \$100.

By reducing your risk of radiation, you can improve your chances of staying healthy and living a long and joyful life.

If you have kids, pay attention to the Wi-Fi situation at school and in their classrooms. Some studies link ADD, ADHD, memory issues, and behavior problems with Wi-Fi routers and nearby cell towers. Cell phone towers are a big business for school districts. Many districts across the country are selling or renting land for cell phone towers. If this is happening in your neighborhood, speak up. It's only going to become more prevalent with the rollout of 5G.

Why Are Companies Pushing 5G?

5G is the wave of the future. This advanced bandwidth will allow you to download movies in a matter of seconds and is expected to support at least a 100 billion devices. That's a whole lot of devices on one bandwidth. In general, 5G will be up to 100 times faster than 4G.

That's fast!

5G stands for 5th generation cellular technology. This is the latest development in the cellular world. Major cell phone companies and other tech giants are making progress right now to be ready to launch 5G capable devices by 2020.

I won't get over technical but in general, 5G will make technology faster, smarter and create a more connected world. According to Tech Radar, 5G will have an average download speed of about 1GBps (1 gigabyte per second).

With faster connectivity, this network will be capable of supporting the Internet of Things, your personal devices and various networks without any delay. Plus, with 5G the connections will be more reliable as well. No more dropped calls or delays when trying to browse the internet.

“It's all about making better use of the radio spectrum and enabling far more devices to access the mobile internet at the same time”-BBC.

5G is being touted as the golden ticket to cellular connectivity. More speed, less waiting and more people and things connected than ever before. However, as I mentioned earlier, advances in technology will no doubt have an impact on our health- impacts we may not even realize are happening until it's too late.

How Will 5G Work?

5G is the super highway for speed, information, and connections. To create this incredible speed and reliability, 5G uses the millimeter wave. This millimeter wave operates between 30GHZ and 300 GHz. According to the BBC, “The higher-frequency bands have a lot of

capacity but their shorter wavelengths mean their range is low.” This means the 5G signal is easily blocked by buildings, cars, planes, plants and other objects.

Because the signal will face so many obstacles, an entire web of small-mini cell towers will need to go up in every city, on every block in every neighborhood around the world. No word yet on exactly how many towers or small masts will need to be installed to support this network. It could easily add up to billions of towers.

A recent article in the UK estimated at least 400,000 extra phone masts would be needed to bring rural Britain to be 5G compatible. That’s just the rural part of Britain. It’s estimated there could be thousands of extra small masts in every single city around the world.

According to experts, the 5G masts will be about four feet tall- not nearly the same height as needed with 4G and 3G networks. These towers will be around every corner and will make communicating with your house, car, and family a breeze. However, being that connected- with so many signals around may cause major health problems. I’ll address this later on in this article.

So, who decides where these towers will go? That’s a great question and one local government across the country and world are addressing right now. However, internet and cell phone providers have lobbyists working with state lawmakers to restrict how much say local government has as to where and when the 5G network cell towers will be placed. As I write this article, 13 states have laws on the books to limit local governments from having a say in the 5G process.

The Difference Between 3G, 4G, and 5G

To understand why 5G cell towers are more dangerous than 4G cell towers, we need to take a closer look at how each network operates. As I mentioned earlier, 5G is the 5th generation of cellular technology and needs shorter waves to function at a high speed. Shorter waves mean there's a greater need for more cell towers because these specific waves have lots of obstacles.

Let's start with 3G. 3G stands for the 3rd generation of cellular technology. This advancement in technology was unveiled in 2003. 3G operates using cellular technology, as in the signals are passed from tower to tower. Then onto the next cell phone tower and so on. This continues until you answer your phone, find your answer on Google and finish watching YouTube.

Cell phone companies strategically place the cell towers in various locations and different heights to give you the best signal possible. 3G was mostly used to make phone calls, texting, and limited internet use.

With 3G the signal can travel farther- however, there has to be another tower around to pick up the signal and you're moving. If there isn't another tower then you experience a temporary interruption in service. With 3G you need fewer towers than 5G to operate. Fewer towers mean less exposure to potentially harmful cell tower radiation.

3G is also referred to as mobile broadband. This term became a catchy way to sell phones and tablets in the mid-2000s. Mobile broadband basically means there are enough cell towers to keep your signal connected while you're moving around town or traveling around the world!

The data speeds for 3G are much slower than 4G and certainly much slower than 5G.

Let's take a closer look at 4G. 4G is what most of us are using today. It's the reason you can Facetime with your best friend in Europe or download an entire movie on your tablet. Some tech experts describe 4G as removing speed bumps in the cellular signal, "allowing traffic to move much faster."

4G uses cell towers, just like with 3G- however, the speed at which data and information can travel is much different. 4G uses more bandwidth than 3G, which means towers need to be more powerful. The more powerful the cell phone towers, the more potential for radiation to be emitted into our environment.

Even though 4G is more powerful than the 3G network- it's not nearly as powerful as 5G. 5G is the super horse, a new wave of technology designed to connect everything via the internet. It's a game changer. This big shift could mean big health consequences as well.

Future of 5G

The future is here and companies are building the infrastructure needed to create a full world-wide rollout of 5G by 2020. AT&T is leading the way in this major effort to make cities 5G compatible. In July, the tech giant announced plans to have the 5G infrastructure in place and ready to go in 12 cities by the end of this year. Verizon and T-Mobile are also planning limited rollouts of 5G in the next year or so.

There is still a lot of work to be done on the 5G front. In May, Verizon announced Los Angeles will be one of the first cities in America to make the move to 5G. This is not a small feat by any means. According to an article in Tech Crunch, Lowell McAdam, Chief Executive for Verizon, said the company purchased 36 million miles of fiber so they can support the hundreds of megahertz of bandwidth needed to deliver "the whole suite of 5G." McAdam said Verizon has added 1,000 extra cell sites in LA to make the 5G experience possible.

Verizon also has plans to bring Boston and other major cities into the 5G era as soon as possible. AT&T announced it's working on 5G capabilities in Atlanta, Dallas, and Waco, TX. Sprint says it's bringing 5G to NYC, Phoenix and Kansas City.

Right now, AT&T is running 5G trials in Waco, TX, and Dallas. South Korea unveiled its 5G system during the Winter Olympics this year.

South Korea, Sweden, Turkey, Japan, and China are also working hard to create a seamless transition to 5G. Some industry insiders are calling the 5G networks a technological revolution. The information, data, and insights made possible by 5G will change how people interact with each other and how businesses operate. According to one article I recently read, 5G has the power to increase revenue across a variety of industries- to the tune of \$12 trillion dollars. Yes, trillion dollars.

“Unlike its predecessors though, 5G is a technological paradigm shift, akin to the shift from typewriter to computer. And it isn't just a network. 5G will become the underlying fabric of an entire ecosystem of fully connected intelligent sensors and devices, capable of overhauling economic and business policies, and further blurring geographical and cultural borders. It will be capable of delivering at every rung of the ecosystem's ladder and will provide seamless, continuous connectivity for business applications,” Technology Review.

“All industries will feel the effects of the shift to 5G. In particular, automotive, health care, and the Internet of Things (IoT) are expected to bring about dramatic transformations in our daily lives.”- Technology Review.

Most companies in the United States hope to have the 5G infrastructure in place by 2020. Each country has its own timeline on a 5G rollout.

Will I need a New Phone/Tablet

Yes, you will most likely need to buy a new phone to take advantage of the speed and reliability promised by 5G. However, if you like your phone and don't want to spend the extra money, your current 4G phone will continue to work just fine- for now.

As I mentioned earlier, 5G offers more bandwidth- which means it can support more data. This network is also more reliable. Some cell phone and tech companies are already offering 5G compatible phones and tablets that make the most out of the new technology.

Your phone is only part of the 5G equation. You may have to pay more for 5G service. It's unclear what the new plans will cost, but it's likely all the major carriers will be competitive to keep customers from jumping ship. In general, you get what you pay for. Better service will mean you will have to pay at least more than your currently used to. Time to start your 5G fund!

5G and You

There's no doubt 5G will change our physical and virtual landscape. However, it's clear this technology comes with major health concerns too. The wave of the future may also mean a wave of new cancers, illnesses, and disabilities.

More research and studies need to be completed before the entire 5G rollout is complete. The potential health consequences associated with the 5G infrastructure is too great to ignore. If you can, stay in contact with your government and advocate for local control over where 5G mini cell towers are located. We must approach this new technology with respect and caution.

For more information on the dangers of cell phone tower radiation check out my blog, [Is Cell Phone Tower Radiation Harmful?](https://www.radiationhealthrisks.com/cell-phone-tower-radiation-harmful/) (<https://www.radiationhealthrisks.com/cell-phone-tower-radiation-harmful/>).

🔍 Search

WHAT INSPIRED THIS WEBSITE



(<https://www.radiationhealthrisks.com/protect-from-rf-radiation-a-helpful-illustrative-guide/>)

Hi! I'm David. Several years ago I read an article about the harmful effects caused by RF Radiation. This led me to an in-depth study of the subject. As I read the findings of many [scientific studies](https://www.radiationhealthrisks.com/scientific-studies/) (<https://www.radiationhealthrisks.com/scientific-studies/>) I was flabbergasted that more people did not know

about this. I bought some meters and began testing my own house and then researching ways to correct the issues I found. This website grew out of that research. Now it is one of the most trusted sources to learn about RF Radiation.

LEGAL INFORMATION

This site is owned and operated by Cornerstone Concepts LLC, a limited liability company headquartered in Idaho, USA. Cornerstone Concepts LLC is a participant in the Amazon Services LLC Associates Program, an affiliate advertising program designed to provide a means for sites to earn advertising fees by advertising and linking to Amazon.com. Cornerstone Concepts LLC also participates in affiliate programs with SmartMeterGuard.com, LessEMF.com, and other sites. Cornerstone Concepts LLC is compensated for referring traffic and business to these companies.

What Inspired This Website

Hi! I'm David. About 4 years ago I read an article about the harmful effects caused by RF Radiation. This led me to an in-depth study of the subject. As I read the findings of many scientific studies I was flabbergasted that more people did not know about this. I bought some meters and began testing my own house and then researching ways to correct the issues I found. This website grew out of that research. Now it is one of the most trusted sources to learn about RF Radiation.

RF Radiation Scientific Studies & Articles

- [Bioinitiative Report \(http://www.bioinitiative.org/table-of-contents/\)](http://www.bioinitiative.org/table-of-contents/)
[t \(http://www.bioinitiative.org/table-of-contents/\)](http://www.bioinitiative.org/table-of-contents/)
 - [Summary for the Public \(https://www.bioinitiative.org/report/wp-content/uploads/pdfs/sec01_2007_summary_for_public.pdf\)](https://www.bioinitiative.org/report/wp-content/uploads/pdfs/sec01_2007_summary_for_public.pdf)
- [Is 5G Harmful to Our Health? \(https://www.saferemr.com/2017/09/5g-wireless-technology-is-5g-harmful-to.html\)](https://www.saferemr.com/2017/09/5g-wireless-technology-is-5g-harmful-to.html)
- [WiFi A Threat to Human Health \(https://www.sciencedirect.com/science/article/pii/S0013935118300355#!\)](https://www.sciencedirect.com/science/article/pii/S0013935118300355#!)
- [Children and Cell Phones \(https://microwavenews.com/children.adults.html\)](https://microwavenews.com/children.adults.html)
- [American Academy of Environmental Health Sciences \(https://www.aeonline.org/emf_rf_position.php\)](https://www.aeonline.org/emf_rf_position.php)
 - [Wireless Smart Meter Case Studies \(https://www.aeonline.org/pdf/pressadvisoryemf.pdf\)](https://www.aeonline.org/pdf/pressadvisoryemf.pdf)
- [Studies of Cell Phone Radiation \(https://www.biorxiv.org/content/biorxiv/early/2016/05/26/055699.full.pdf\)](https://www.biorxiv.org/content/biorxiv/early/2016/05/26/055699.full.pdf)
- [PubMed.gov – Brain Tumors Diagnosed \(https://www.ncbi.nlm.nih.gov/pubmed/16541280\)](https://www.ncbi.nlm.nih.gov/pubmed/16541280)

Legal Information

This site is owned and operated by Cornerstone Concepts LLC, a limited liability company headquartered in Idaho, USA. Cornerstone Concepts LLC is a participant in the Amazon Services LLC Associates Program, an affiliate advertising program designed to provide a means for sites to earn advertising fees by advertising and linking to Amazon.com. Cornerstone Concepts LLC also participates in affiliate programs with SmartMeterGuard.com, LessEMF.com, and other sites. Cornerstone Concepts LLC is compensated for referring traffic and business to these companies.

COPYRIGHT 2019 - CORNERSTONE CONCEPTS LLC - [BESTLOCALRESULTS.COM \(HTTP://BESTLOCALRESULTS.COM\)](http://bestlocalresults.com)

[PRIVACY POLICY \(HTTPS://WWW.RADIATIONHEALTHRISKS.COM/PRIVACY-POLICY/\)](https://www.radiationhealthrisks.com/privacy-policy/)



EXCLUSIVE MEMBER OF MEDIAVINE HOME

JANUARY 29, 2019 BY PMG

Wireless Radiation Killing Monarch Butterflies

By Nina Beety Jan 19, 2018 | Monterey Herald Letter to Editor here.

The Jan. 7 and Jan. 18 monarch butterfly articles in the Monterey Herald omitted **microwave radiation impacts — cell towers, Wi-Fi, Smart Meters, cellphones, radar.**

Dr. Sharon Goldberg told Michigan legislators in October,

"Wireless radiation has biological effects. Period. These effects are seen in all life forms: plants, animals, insects, microbes."

Last year, European agency EKLIPSE reviewed wildlife impacts and Newsweek reported:

"Technology is quite literally destroying nature. Radiation from cell phones, WiFi are hurting the birds and the bees."

Santa Clara County Medical Association Bulletin published "Wireless Silent Spring" on the similarities of pesticides and wireless radiation exposure.

AT&T cell towers have microwaved the Pacific Grove Monarch Sanctuary for eight years. Infertility and disorientation are known impacts. The latest butterfly count is 625 (Jan. 12), not 800. Going, going, gone?

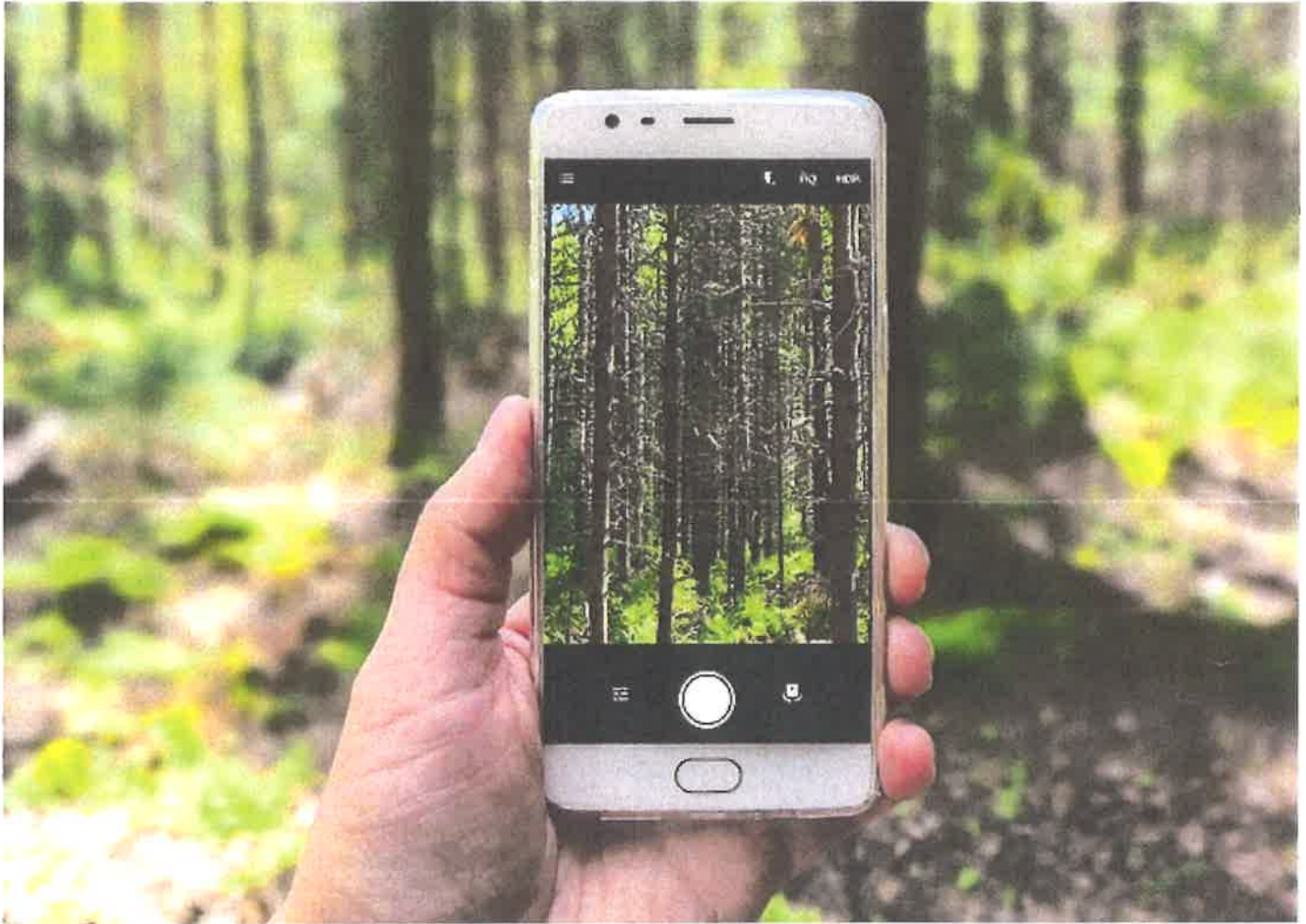
LTE means Long Term Extinction. The monarchs, the bees and the birds are the canaries. Will the Herald continue to protect the Telecom industry and sacrifice monarch butterflies, bees, trees, birds, children, and our future?

Turning off the AT&T cell towers at the PG Monarch Sanctuary is a necessary first step to helping the monarchs locally.

Who will do it?

OUR CELLPHONE ADDICTION IS TURNING WIRELESS TECH INTO AN INVISIBLE WEAPON THAT'S DESTROYING WILDLIFE

August 3, 2018



- 106
- 12
- 2
- 1
- 5
-

▪ Like

Reynard Loki, *Independent Media Institute*

Waking Times

There is growing evidence that our addiction to cellphones could be **impacting brain functionality** and be the cause of stress, anxiety, insomnia and a lack of attention and focus. **Now a new report has found that we're not the only living things to be affected by our increasing dependence on wireless technology. Mammals, birds, insects and even plants are likely being**

harmful by the electromagnetic radiation (EMR) emanating from Wi-Fi, cellphone towers, broadcast transmitters and power lines, according to a new analysis of 97 peer-reviewed studies conducted by EKLIPSE, a biodiversity and ecosystem project funded by the European Union.

The researchers said that “evidence is accumulating that mammals (e.g., bats and mice) have a magnetic sense” that is affected by radio-frequency-modulated electromagnetic fields (RF-EMR). Birds in particular may be highly susceptible. The researchers found that even weak magnetic fields in the radio frequency range can disrupt birds’ magnetoreception, their ability to use the Earth’s magnetic fields to orient themselves and find their way home.

Homing pigeons are well-known for their magnetoreception, but this sense has also been detected in other animals, like red foxes, and there is evidence that even large mammals like deer use the planet’s magnetic fields to sense direction. A number of invertebrates, including worms, mollusks and fruit flies also use this ability.

The report also concluded that EMR can also alter the metabolism of plants, causing “significant changes ... demonstrated at cellular and molecular levels.” The authors noted that even a low level exposure to EMR “caused a rapid increase in stress-related transcript accumulation in tomato [plants].” Transcription is the first phase in the expression of a gene, in which a specific segment of DNA is copied into RNA.

The authors said that their findings indicate “an urgent need to strengthen the scientific basis of the knowledge on EMR and their potential impacts on wildlife,” specifically calling out the “need to base future research on sound, high-quality, replicable experiments so that credible, transparent and easily accessible evidence can inform society and policy-makers to make decisions and frame their policies.”

The UK charity Buglife (which proposed the analysis) warned that there wasn’t enough research to determine limits to EMR pollution. The group said that “serious impacts on the environment could not be ruled out” and urged that 5G transmitters should not be placed near street lights, which attract nocturnal insects like moths, nor in areas near wildlife.

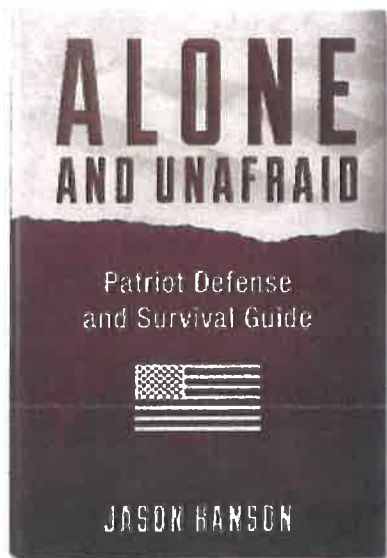
Buglife CEO Matt Shardlow, who served on the experts steering group of the report, warned that “there is a credible risk that 5G could impact significantly on wildlife.” He added:

“We apply limits to all types of pollution to protect the habitability of our environment, but as yet, even in Europe, the safe limits of electromagnetic radiation have not been determined, let alone applied. This is a classic case of out of sight out of mind, just because humans cannot see electromagnetic radiation this does not mean that animals cannot ‘see’ the pollution or be significantly impacted at a neural or cellular level. A proper research program and clear policy measures are long overdue.”

Shardlow specifically warned of the current rollout of 5th-generation wireless systems or 5G networks, and called on telecommunications firms to research the impact of their wireless technology on wildlife and make their findings public. In May, Qatar became the first nation in the world to have a 5G network. The worldwide commercial launch of 5G is expected in 2020. The report authors also said that strong EMR fields increase the temperature in living tissue, but the intensity needed to induce such heating is “not experienced by wildlife (so far).” It’s notable

that they left the door open to this other potential emerging threat, as cellphone adoption rates are steadily rising globally. The number of smartphone users worldwide is forecast to grow from 2.1 billion in 2016 to around **2.5 billion in 2019**, according to Statista, a market research firm. That means more cell towers—and more EMR being emitted into the environment.

“When you start to observe and realize that swallows and house martins no longer nest in towns and villages, when you realize that the sparrows have all disappeared, that in the evenings there are no bats flying in the dusk and that you no longer hear owls hooting, then you will begin to know what effect microwaves from cell towers and antennas are having on the environment,” said one commenter to a One World News article about the report.



Claim Your FREE Copy of this best-selling self-defense and survival guide.

Inside this book, a former CIA Officer REVEALS: “The Trident”- A confidential trade secret of the U.S. intelligence community and the #1 Most DEVASTATING Self-Defense Technique Ever Developed.

Normal Price: \$49
Your Price: FREE!

YES! PLEASE RUSH MY FREE COPY OF ALONE AND UNAFRAID: PATRIOT DEFENSE AND SURVIVAL GUIDE TO MY DOOR TODAY

CAUTION: The Trident ‘3 move’ sequence you’re about to see could be dangerous in the wrong hands.

Free Book: Former CIA Officer REVEALS “The Trident” and everything you need to keep your home and family safe.

The report comes on the heels of a recent **appeal to the United Nations**, signed by more than 200 scientists from 41 countries, urging the international body to address the risks posed by electromagnetic fields (EMF), physical fields produced by objects charged by electromagnetic fields and radiofrequency radiation. Specifically, the scientists want the UN to “recognize that EMF exposure is an emerging health and environmental crisis that requires a high priority response.”

“Biologists and scientists are not being heard on the committees that set safety standards,” said Dr. Martin Blank of the Department of Physiology and Cellular Biophysics at Columbia University and signatory of the appeal, in a video address on the website of International EMF

Alliance, a group founded in 2009 that disseminates information to policymakers and health authorities about the potential effects of electromagnetic radiation. “The biological facts are being ignored and as a result, the safety limits are much too high. They are not protective.”

Though evidence is mounting that humans may also be physiologically affected by EMF, the jury is still out on the impact of long-term low-frequency exposure. The World Health Organization (WHO) concluded that “current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields.” However, the agency does admit that “**some gaps in knowledge about biological effects exist and need further research.**”

But the WHO is partially responsible for the widespread concern. As Bob Berman points out in his recent book *Zapped: From Infrared to X-rays, the Curious History of Invisible Light*: “Some of the fears are based on a report issued in 2011 by the World Health Organization’s International Agency for Research on Cancer (IARC). The agency had gathered in Lyon, France, to discuss scientific studies surrounding the question of whether there’s a relationship between radio-frequency-modulated electromagnetic fields (RF-EMF) and cancer. After intense deliberations, and to the great surprise of the world at large, experts decided to classify RF-EMF waves emitted by cell phones, cell towers, and Wi-Fi networks as category 2B, indicating a *‘possible human carcinogen.’*”

For Dr. Blank and his colleagues raising the warning flag to the United Nations, the evidence is clear. “Cellphones, tablets, Wi-Fi, etc. Putting it bluntly, they are **damaging the living cells in our bodies and killing many of us prematurely,**” he said in his video address. “Rising exposure to electromagnetic radiation is a global problem. The World Health Organization and international standard-setting bodies are not acting to protect the public’s health and well-being. International exposure guidelines for electromagnetic fields must be strengthened.”

In his video address, Dr. Blank suggested that the current EMF safety limits may be inadequate due to the influence of the telecommunications industry on the policymakers. “More protection will probably result from full disclosure of possible conflicts of interest between regulators and industry,” he said.

“We have created something that is harming us, and it is getting out of control. Before Edison’s lightbulb, there was very little electromagnetic radiation in our environment. The levels today are very many times higher than natural background levels and are growing rapidly because of all the new devices that emit this radiation. An example that a lot of us have right now in our pockets is the cellphone.”

Watch Dr. Martin Blank’s video address:



Living a *Naturally Healthy* life in our electromagnetic world.

Lloyd Burrell

As heard on Republic Broadcasting Network Radio



ElectricSense

Need Help? Type What You Are Looking For Below

Search ElectricSense

(examples: Is wifi safe? what is dirty electricity? cell phone protection tips, what is best emf meter)

- Store
- Coaching
- EMF meters
- Electromagnetic protection
- Electrical sensitivity
- Cell phone radiation
- EMFs in your life
- Smart Meters
- Teleseminars

5G Radiation Dangers – 11 Reasons To Be Concerned

facebook 6k

twitter 9

pinterest 110

Like it or not we're rapidly moving into the world of 5G, or 5th generation cellular telecommunications.

Why?

Because the frequency bandwidths used currently by cell phones and similar technologies are becoming saturated.

And also because we live in a world where people want more. 5G, and the Internet of Things (IoT) that goes with it, promises to give us more.

But more what?

Super-Fast Download Speeds

5G and IoT promises to connect us in our homes, schools, workplaces, cities, parks and open spaces to over a trillion objects around the world. It promises cars that drive themselves, washing machines that order their own washing powder and softener plus of course super fast downloads and streaming.

According to Fortune.com 5G will support at least 100 billion devices and will be 10 to 100 times faster than current 4G technology.(4G was already about 100 times faster than 3G).

It'll bring download speed up to 10 Gigabits per second. This would let us have an entire building of people send each other data in close to no time, thus improving productivity.

What is 5G?

5G offers mind-blowing data capabilities, practically unrestricted call volumes and near infinite data broadcast. It does this by 5G using largely untapped bandwidth the millimeter wave (MMW), which is between 30GHz and 300GHz, as well as some lower and mid-range frequencies.

This table compares the different generations of mobile technologies:

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

[Read More](#)

Technology	1G	2G	3G	4G	5G
Start/Deployment	1970-80	1990-2004	2004-10	Now	Soon (probably by 2020)
Data Bandwidth	2Kbps	64 Kbps	2 Mbps	1 Gbps	Higher than 1 Gbps
Technology	Analog	Digital	CDMA 2000, UMTS,EDGE	Wi-Max, Wi-Fi, LTE	WWWW
Core Network	PSTN	PSTN	Packet N/W	Internet	Internet
Multiplexing	FDMA	TDMA/CDMA	CDMA	CDMA	CDMA
Switching	Circuit	Circuit,Packet	Packet	All Packet	All Packet
Primary Service	Analog Phone Calls	Digital Phone Calls and Messaging	Phone calls, Messaging, Data	All-IP Service (including Voice Messages)	High speed, High capacity and provide large broadcasting of data in Gbps
Key differentiator	Mobility	Secure, Mass adoption	Better Internet experience	Faster Broadband Internet, Lower Latency	Better coverage and no dropped calls, much lower latency, Better performance
Weakness	Poor spectral efficiency, major security issue	Limited data rates, difficult to support demand for internet and e-mail	Real performance fail to match type, failure of WAP for internet access	Battery use is more, Required complicated and expensive hardware	?

Source: IJMTER ISSN (online) 2349 - 9745 Evolution of Mobile Generation Technology: 1G to 5G and Review of Upcoming Wireless Technology 5G

There are some other features of 5G you need to be aware of:

Wireless Cell Antennas Galore

Millimeter waves (MMWs) do not travel well through buildings and they tend to be absorbed by rain and plants. This interferes with the signal. Added to this, high frequency waves like MMWs also have much shorter wavelengths that can't travel far.

To counter this problem 5G will utilize smaller cell stations (and the technology of beamforming) that'll scramble/unscramble and redirect packets of data on a no-interference path back to us. **This could mean wireless antennas on every lamp post, utility pole, home and business throughout entire neighborhoods, towns and cities.**

This short video gives a succinct explanation of what you can expect:

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

Accept

Reject

[Read More](#)

MIMO Miniature Cell Towers

Current 4G cell towers have about a dozen or so antenna ports to support all communication, the new, smaller 5G cell towers (or bases) will be MIMO (Multiple Input Multiple Output) and carry about a hundred ports. These towers will probably be about 4 feet tall as opposed to the usual 90 feet towers currently erected around us. Cells will be available within a 100 meter range and these smart antennas will be able to differentiate between various mixed-up signals – like radio waves and WiF signals – in the air and beam them back in an orderly fashion so to speak.

Low Latency – High Efficiency

5G will break down data and send it in smaller sizes to offer significantly reduced transmission times. Data will be sent with only a 1 millisecond delay instead of a 5 millisecond delay commonly found with 4G. With communication this fast, it'll allow machines to talk to each other with practically no room for error. As Marcus Welb, the CTO of Alcatel Lucent comments, "up until now, we've designed the networks for people and their needs, and now we're designing it for things."

The Dangers Of 5G – 11 Reasons To Be Concerned

The USA is currently leading the way on 5G. At the June 2016 press conference where the Federal Communications Commission's (FCC) head Tom Wheeler announced the opening up of low, mid and high spectrum's. **There was no mention of health effects whatsoever. But the dangers are real.**

Thousands of studies link low-level wireless radio frequency radiation exposures to a long list of adverse biological effects, including:

- DNA single and double strand breaks
- oxidative damage
- disruption of cell metabolism
- increased blood brain barrier permeability
- melatonin reduction
- disruption to brain glucose metabolism
- generation of stress proteins

Let's not also forget that in 2011 the [World Health Organization](#) (WHO) classified radio frequency radiation as a possible 2B carcinogen.

More recently the \$25 million National Toxicology Program concluded that radio frequency radiation of the type currently used by cell phones can cause [cancer](#).

But where does 5G fit into all this? Given that 5G is set to utilize frequencies above and below existing frequency bands 5G sits in the middle of all this. But the tendency (it varies from country to country) is for 5G to utilize the higher frequency bands. Which brings it's own particular concerns. **Here is my review of the stuff done to date – 11 reasons to be concerned.**

#1 – A Denser Soup of Electrosmog

We're going to be bombarded by really high frequencies at low, short-range intensities creating a yet more complicated denser soup of electrosmog – a this diagram shows.



Coverage Layer:

600 MHz, 700 MHz, 800 MHz, 900 MHz, 1.5 GHz, 2.1 GHz, 2.3 GHz and 2.6 GHz

Capacity Layer:

Europe: 3400 – 3800 MHz (awarding trial licenses)
 China: 3300 – 3600 MHz (ongoing trial), 4400 – 4500 MHz, 4800 – 4990 MHz
 USA: 3100 – 3550 MHz (and 3700 – 4200 MHz)
 Japan: 3600 – 4200 MHz and 4400 – 4900 MHz

High Throughput Layer: (most-most and also very locally in dense user locations)

Europe: 24.25 – 27.5 GHz for commercial deployments from 2020
 China: Focusing on 24.25 – 27.5 GHz and 37 – 43.5 GHz studies
 USA: 27.5 – 28.35 GHz and 37 – 40 GHz pre-commercial deployments in 2018
 Japan: 27.5 – 28.28 GHz trials planned from 20

Source: Latest on 5G Spectrum – EMFields Ltd.

To work with the higher range MMW in 5G, the antennas required are smaller. Some experts are talking about as small as 3mm by 3mm. The low intensity is for efficiency and to deal with signal disruption from natural and man-made obstacles.

#2 – Effects on the Skin

The biggest concern is how these new wavelengths will affect the skin. The human body has between two million to four million sweat ducts. Dr. Ben-Ishai of Hebrew University, Israel explains that our sweat ducts act like "an array of helical antennas when exposed to these wavelengths," meaning that we become more conductive. A recent New York study which experimented with 60GHz waves stated that "the analyses of penetration depth show that more than 90% of the transmitted power is absorbed in the epidermis and dermis layer."

The effects of MMWs as studied by [Dr. Yael Stein](#) of Hebrew University is said to also cause humans physical pain as our nociceptors flare up in recognition of the wave as a damaging stimuli. So we're looking at possibilities of many skin diseases and cancer as well as physical pain to our skin.

#3 – Effects on the Eyes

A 1994 study found that low level millimeter microwave radiation produced lens opacity in rats, which is linked to the production of cataracts.

An experiment conducted by the Medical Research Institute of Kanazawa Medical University found that 60GHz "millimeter-wave antennas can cause thermal injury varying types of levels. The thermal effects induced by millimeterwaves can apparently penetrate below the surface of the eye."

A 2003 Chinese study has also found damage to the lens epithelial cells of rabbits after 8 hours of exposure to microwave radiation and a 2009 study conducted by College of Physicians and Surgeons in Pakistan conclude that EMFs emitted by a mobile phone cause derangement of chicken embryo retinal differentiation.

#4 – Effects On The Heart

A 1992 Russian study found that frequencies in the range 53-78GHz (that which 5G proposes to use) impacted the heart rate variability (an indicator of stress) in rats. Another Russian study on frogs whose skin was exposed to MMWs found heart rate changes (arrhythmias).

#5 – Immune System Effects

A 2002 Russian study examined the effects of 42GHz microwave radiation exposure on the blood of healthy mice. It was concluded that "the whole-body exposure of healthy mice to low-intensity EHF EMR has a profound effect on the indices of nonspecific immunity".

#6 – Effects on Cell Growth Rates

A 2016 Armenian study observed MMWs at low intensity, mirroring the future environment brought about by 5G. Their study conducted on E-coli and other bacteria stated that the waves had depressed their growth as well as "changing properties and activity" of the cells. The concern is that it would do the same to human cells.

#7 – Effects on Bacteria Resistance

The very same Armenian study also suggested that MMWs effects are mainly on water, cell plasma membrane and genome too. They had found that MMW's interaction with bacteria altered their sensitivity to "different biologically active chemicals, including antibiotics." More specifically, the combination of MMW and antibiotics showed that it may be leading to antibiotic resistance in bacteria.

This groundbreaking finding could have a magnum effect on the health of human beings as the bandwidth is rolled out nationwide. The concern is that we develop

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

Accept

Reject

[Read More](#)

One of the features of 5G is that the MMW is particularly susceptible to being absorbed by plants and rain. Plants and animals alike consume plants as a food source. The effects MMW has on plants could leave us with food that's not safe to consume.

Think GMOs on steroids. The water that falls from the sky onto these plants will also be irradiated. A 2010 study on aspen seedlings showed that the exposure to radio frequencies led to the leaves showing necrosis symptoms.



Source:

<https://www.hindawi.com/journals/ijfr/2010/83627>

Another [Armenian study](#) found that MMWs of low intensity "invoke(s) peroxidase isoenzyme spectrum changes of wheat shoots." Peroxidase is a stress protein existing in plants. Indications are that 5G will be particularly harmful to plants – perhaps more so than to humans.

#9 – Effects on the Atmosphere and Depletion of Fossil Fuels

Implementation of the 5G global wireless network requires the launching of rockets to deploy satellites for 5G. These satellites have a short lifespan which would require a lot more deployment than what we're currently seeing. A new type of hydrocarbon rocket engine expected to power a fleet of suborbital rockets would emit black carbon which "could cause potentially significant changes in the global atmospheric circulation and distributions of ozone and temperature" according to a 2017 [Californian study](#). Solid state rocket exhaust contains chlorine which also destroys the ozone.

The effects on the ozone are thought to be worse than current day CFC exposure.

Google's Project Loon is said to bring Internet to rural and hard-to-access areas by using helium balloons. But these balloons only have a 10-month lifespan. We're looking at a lot of helium being used here, more than what we can possibly have on Earth?

#10 – Disruption of the Natural Ecosystem

Since the year 2000, there have been reports of birds abandoning their nests as well as health issues like "plumage deterioration, locomotion problems, reduced survivorship and death," says researcher Alfonso Balmori. Bird species that are affected by these low levels, non-ionizing microwave radiation are the House Sparrow, Rock Doves, White Storks, Collared Doves and Magpies, among others.

But it's not just the birds. The declining bee population is also said to be linked to this non-ionizing EMF radiation. It reduces the egg-laying abilities of the queen leading to a decline in colony strength.

A study conducted by Chennai's Loyola College in 2012 concluded that out of 919 research studies carried out on birds, plants, bees and other animals and human 593 of them showed impacts from RF-EMF radiations. 5G will be adding to the effects of this electrosmog.

#11 – Most 5G Studies Mis-Leading

5G will use pulsed millimeter waves to carry information. But as Dr. Joel Moskowitz points out, **most 5G studies are misleading because they do not pulse the waves.** This is important because research on microwaves already tells us how pulsed waves have more profound biological effects on our body compared to non-pulsed waves. Previous studies, for instance, show how pulse rates of the frequencies led to gene toxicity and DNA strand breaks.

Live Testing Already Begun

AT&T have announced the availability of their 5G Evolution in Austin, Texas. 5G Evolution allows Samsung S8 and S8 + users access to faster speeds. This is part of AT&T's plan to lay the 5G foundation while the standards are being finalized. AT&T has eyes on 19 other metropolitan areas such as Chicago, Los Angeles, Boston, Atlanta, San Francisco and so on. With Indianapolis to follow.

Charter, the second-largest cable operator in the US, has been approved for an experimental 28 GHz license in Los Angeles. The outdoor tests will use fixed transmitters with a 1 km or smaller effective radius.

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

Accept

Reject

[Read More](#)

Many more private sector companies such as AT&T, Oracle, Sprint, T-Mobile are playing a role in the deployment of testing platforms by contributing time, knowledge or money.

In the UK the 3.4GHz band has been earmarked for 5G use with contracts awarded to O2, Vodaphone, EE and Three. While the 2.3GHz band, awarded to C is likely to be used for 5G too in time.

Call to Action

Research and pre-testing is rampant by companies who are interested to tap into the lucrative waters of 5G. But few are willing to research its effects on health. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines remain essentially unchanged since 1998, not allowing for the recognition of radio frequency microwave radiation and MMWs as harmful unless there is a heating effect. But a few experts are speaking out.

[Dariusz Leszczynski](#) from the University of Helsinki and also former member of the International Agency Research on Cancer is one of them. He has brought to attention to ICNIRP intention to classify skin as limbs. Limbs are paid lesser attention to when classifying exposure levels. Research indicates that MMWs affect the skin and the eyes the most. If skin is classified as a limb, this will pave the way for industry giants to introduce even higher exposures and put more people at risk.

The Global Union Against Radiation Deployment from Space (GUARD) addressed a [letter](#) to the FCC in September of 2016, bringing to their attention the harm 5G inflict. GUARD warned the FCC that 5G violates Article 3 of The UN Declaration of Human Rights which states that "everyone has the right to life, liberty and security person." The document is laden with research, information and global support.

To learn how to write, call or email the relevant agencies to protest against the 5G deployment go here parentsforsafetechnology.org

What Experts are Saying

Here's what experts are saying about 5G:

"Along with the 5G there is another thing coming – Internet of Things. If you look at it combined the radiation level is going to increase tremendously and yet the industry is very excited about it... they project 5G/IoT business to be a \$7 trillion business."

-Prof. Girish Kumar, Professor at Electrical Engineering Department at IIT Bombay

"The new 5G wireless technology involves millimeter waves (extremely high frequencies) producing photons of much greater energy than even 4G and WiFi. Allowing this technology to be used without proving its safety is reckless in the extreme, as the millimeter waves are known to have a profound effect on all parts of the human body."

-Prof. Trevor Marshall, Director Autoimmunity Research Foundation, California

"The plans to beam highly penetrative 5G milliwave radiation at us from space must surely be one of the greatest follies ever conceived of by mankind. There will be nowhere safe to live."

-Oiga Sheean former WHO employee and author of 'No Safe Place'

"It would irradiate everyone, including the most vulnerable to harm from radiofrequency radiation: pregnant women, unborn children, young children, teenagers, men of reproductive age, the elderly, the disabled, and the chronically ill."

—Ronald Powell, PhD, Letter to FCC on 5G expansion

How To Protect Yourself From 5G

My 3 step approach for dealing with EMFs can be summarized as:

1. Understand your exposures. Understand the different types of EMFs and how they behave – hence the need to read (and share) articles like this one.
2. Measure – use an [EMF meter](#) to obtain readings and identify hotspots.
3. Mitigate your exposure. Which means either eliminate the source, move further away from the source of radiation or shield your body.

I recommend the same approach w/ 5G. There is a concern that current EMF meters are not able to measure the frequencies of MMWs. On this point, researcher Alasdair Phillips from Powerwatch states "current RF meters cover the frequency ranges proposed for most 5G use in the next three years".

Endless Possibilities For The Future

5G may bring about a new form of industrial revolution, human connectivity and even a new reality. It offers endless possibilities for the future.

We do need more research. But already what is clear, as the research I've shared here indicates, is that there are real dangers.

Which is why it even more important to take action to protect yourself and your loved ones. Please share this article with your friends and family.

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

Accept

Reject

[Read More](#)

<https://5g.co.uk/news/5g-spectrum-auction-reserved/4336/>

<https://www.radiomagonline.com/trends/at-t-charter-experimenting-in-los-angeles-wlth-5g-using-28-ghz-spectrum>

Comments are welcome. Before you post a comment please read these [guidelines](#).
Copyright © ElectricSense.com 2019. All rights reserved.

[Home](#) | [Terms of Service](#) | [Privacy Policy](#) | [About Lloyd](#) | [Administrative Contact](#) | [Sitemap](#)

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

Accept

Reject

[Read More](#)

5G Radiation Dangers – 11 Reasons To Be Concerned



Like it or not we're rapidly moving into the world of 5G, or 5th generation cellular telecommunications.

Why?

Because the frequency bandwidths used currently by cell phones and similar technologies are becoming saturated.

And also because we live in a world where people want more. 5G, and the Internet of Things (IoT) that goes with it, promises to give us more.

But more what?

Super-Fast Download Speeds

5G and IoT promises to connect us in our homes, schools, workplaces, cities, parks and open spaces to over a trillion objects around the world. It promises cars that drive themselves, washing machines that order their own washing powder and softener plus of course super fast downloads and streaming.

According to [Fortune.com](https://www.fortune.com) 5G will support at least 100 billion devices and will be 10 to 100 times faster than current 4G technology. (4G was already about 10 times faster than 3G).

It'll bring download speed up to 10 Gigabits per second. This would let us have an entire building of people send each other data in close to no time, thus improving productivity.

What is 5G?

5G offers mind-blowing data capabilities, practically unrestricted call volumes and near infinite data broadcast. It does this by 5G using largely untapped bandwidth of the millimeter

wave (MMW), which is between 30GHz and 300GHz, as well as some lower and mid-range frequencies.

This table compares the different generations of mobile technologies:

Technology	1G	2G	3G	4G	5G
Start/Deployment	1970-80	1990-2004	2004-10	Now	Soon (probably t 2020)
Data Bandwidth	2Kbps	64 Kbps	2 Mbps	1 Gbps	Higher than Gbps
Technology	Analog	Digital	CDMA 2000, UMTS,EDGE	Wi-Max, Wi-Fi, LTE	WWWW
Core Network	PSTN	PSTN	Packet N/W	Internet	Internet
Multiplexing	FDMA	TDMA/CDMA	CDMA	CDMA	CDMA
Switching	Circuit	Circuit,Packet	Packet	All Packet	All Packet
Primary Service	Analog Phone Calls	Digital Phone Calls and Messaging	Phone calls, Messaging, Data	All-IP Service (including Voice Messages)	High speed High capacity and provide lar broadcastin of data in Gbps
Key differentiator	Mobility	Secure, Mass adoption	Better Internet experience	Faster Broadband Internet, Lower Latency	Better coverage and no dropped calls, much lower latency, Better performanc
Weakness	Poor spectral efficiency, major security issue	Limited data rates, difficult to support demand for internet and e- mail	Real performance fail to match type, failure of WAP for internet access	Battery use is more, Required complicated and expensive hardware	?

Source: IJMTER ISSN (online) 2349 - 9745 Evolution of Mobile Generation Technol
1G to 5G and Review of Upcoming Wireless Technology 5G

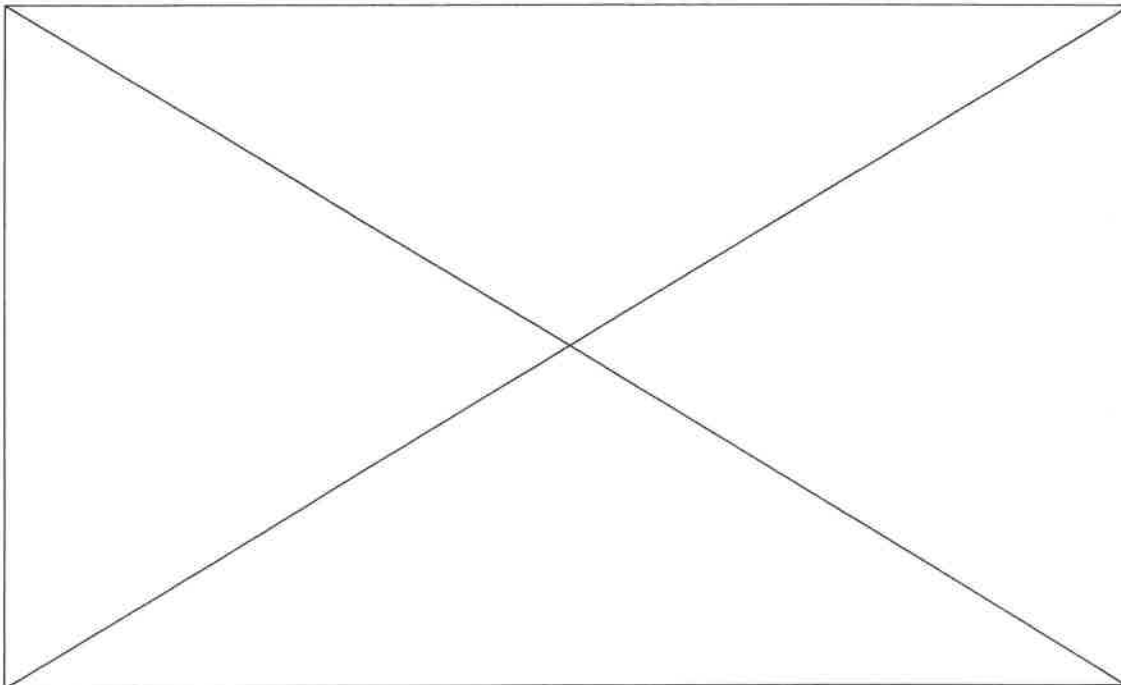
There are some other features of 5G you need to be aware of:

Wireless Cell Antennas Galore

Millimeter waves (MMWs) do not travel well through buildings and they tend to be absorbed by rain and plants. This interferes with the signal. Added to this, high frequency waves like MMWs also have much shorter wavelengths that can't travel far.

To counter this problem 5G will utilize smaller cell stations (and the technology of beamforming) that'll scramble/unscramble and redirect packets of data on a no-interference path back to us. **This could mean wireless antennas on every lamp post, utility pole, home and business throughout entire neighborhoods, towns and cities.**

This short video gives a succinct explanation of what you can expect:



MIMO Miniature Cell Towers

Current 4G cell towers have about a dozen or so antenna ports to support all communication, the new, smaller 5G cell towers (or bases) will be MIMO (Multiple Input Multiple Output) and carry about a hundred ports. These towers will probably be about 4 feet tall as opposed to the usual 90 feet towers currently erected around us. Cells will be available within a 100 meter range and these smart antennas will be able to differentiate between various mixed-up signals – like radio waves and WiFi signals – in the air and beam them back in an orderly fashion so to speak.

Low Latency – High Efficiency

5G will break down data and send it in smaller sizes to offer significantly reduced transmission times. Data will be sent with only a 1 millisecond delay instead of a 50 millisecond delay commonly found with 4G. With communication this fast, it'll allow machines to talk to each other with practically no room for error. As Marcus Weldon the CTO of Alcatel Lucent comments, *“up until now, we’ve designed the networks for people and their needs, and now we’re designing it for things.”*

The Dangers Of 5G – 11 Reasons To Be Concerned

The USA is currently leading the way on 5G. At the June 2016 press conference where the Federal Communications Commission's (FCC) head Tom Wheeler announced the opening up of low, mid and high spectrum's. There was no mention of health effects whatsoever. But the dangers are real.



Thousands of studies link low-level wireless radio frequency radiation exposures to a long list of adverse biological effects, including:

- DNA single and double strand breaks
- oxidative damage
- disruption of cell metabolism
- increased [blood brain barrier permeability](#)
- melatonin reduction
- disruption to brain glucose metabolism

- generation of stress proteins

Let's not also forget that in 2011 the [World Health Organization](#) (WHO) classified radio frequency radiation as a possible 2B carcinogen.

More recently the \$25 million National Toxicology Program concluded that radio frequency radiation of the type currently used by cell phones can cause [cancer](#).

But where does 5G fit into all this? Given that 5G is set to utilize frequencies above and below existing frequency bands 5G sits in the middle of all this. But the tendency (it varies from country to country) is for 5G to utilize the higher frequency bands. Which brings it's own particular concerns. **Here is my review of the studies done to date – 11 reasons to be concerned.**

#1 – A Denser Soup of Electrosmog

We're going to be bombarded by really high frequencies at low, short-range intensities creating a yet more complicated denser soup of electrosmog – as this diagram shows.

Coverage Layer:

600 MHz, 700 MHz, 800 MHz, 900 MHz, 1.5 GHz, 2.1 GHz, 2.3 GHz and 2.6 GHz

Capacity Layer:

Europe: 3400 – 3800 MHz (awarding trial licenses)

China: 3300 – 3600 MHz (ongoing trial), 4400 – 4500 MHz, 4800 – 4990 MHz

USA: 3100 – 3550 MHz (and 3700 – 4200 MHz)

Japan: 3600 – 4200 MHz and 4400 – 4900 MHz

High Throughput Layer: (mast-mast and also very locally in dense user locations)

Europe: 24.25 – 27.5 GHz for commercial deployments from 2020

China: Focusing on 24.25 – 27.5 GHz and 37 – 43.5 GHz studies

USA: 27.5 – 28.35 GHz and 37 – 40 GHz pre-commercial deployments in 2018

Japan: 27.5 – 28.28 GHz trials planned from 20

Source: Latest on 5G Spectrum – EMFields Ltd.

To work with the higher range MMW in 5G, the antennas required are smaller. Some experts are talking about as small as 3mm by 3mm. The low intensity is for efficiency and to deal with signal disruption from natural and man-made obstacles.

#2 – Effects on the Skin

The biggest concern is how these new wavelengths will affect the skin. The human body has between two million to four million sweat ducts. Dr. Ben-Ishai of Hebrew University, Israel explains that our sweat ducts act like *“an array of helical antennas when exposed to these wavelengths,”* meaning that we become more conductive. A recent New York study which experimented with 60GHz waves stated that *“the analyses of penetration depth show that more than 90% of the transmitted power is absorbed in the epidermis and dermis layer.”*

The effects of MMWs as studied by [Dr. Yael Stein](#) of Hebrew University is said to also cause humans physical pain as our nociceptors flare up in recognition of the wave as a damaging stimuli. So we're looking at possibilities of many skin diseases and cancer as well as physical pain to our skin.

#3 – Effects on the Eyes

A 1994 study found that low level millimeter microwave radiation produced lens opacity in rats, which is linked to the production of cataracts.

An experiment conducted by the Medical Research Institute of Kanazawa Medical University found that 60GHz *“millimeter-wave antennas can cause thermal injuries of varying types of levels. The thermal effects induced by millimeterwaves can apparently penetrate below the surface of the eye.”*

A 2003 Chinese study has also found damage to the lens epithelial cells of rabbits after 8 hours of exposure to microwave radiation and a 2009 study conducted by the College of Physicians and Surgeons in Pakistan conclude that EMFs emitted by a mobile phone cause derangement of chicken embryo retinal differentiation.

#4 – Effects On The Heart

A 1992 Russian study found that frequencies in the range 53-78GHz (that which 5G proposes to use) impacted the heart rate variability (an indicator of stress) in rats. Another

Russian study on frogs whose skin was exposed to MMWs found heart rate changes (arrhythmias).

#5 – Immune System Effects

A 2002 Russian study examined the effects of 42HGz microwave radiation exposure on the blood of healthy mice. It was concluded that *“the whole-body exposure of healthy mice to low-intensity EHF EMR has a profound effect on the indices of nonspecific immunity”*.

#6 – Effects on Cell Growth Rates

A 2016 Armenian study observed MMWs at low intensity, mirroring the future environment brought about by 5G. Their study conducted on E-coli and other bacteria stated that the waves had depressed their growth as well as *“changing properties and activity”* of the cells. The concern is that it would do the same to human cells.

#7 – Effects on Bacteria Resistance

The very same Armenian study also suggested that MMWs effects are mainly on water, cell plasma membrane and genome too. They had found that MMW's interaction with bacteria altered their sensitivity to *“different biologically active chemicals, including antibiotics.”* More specifically, the combination of MMW and antibiotics showed that it may be leading to antibiotic resistance in bacteria.

This groundbreaking finding could have a magnum effect on the health of human beings as the bandwidth is rolled out nationwide. The concern is that we develop a lower resistance to bacteria as our cells become more vulnerable – and we become more vulnerable.

#8 – Effects on Plant Health

One of the features of 5G is that the MMW is particularly susceptible to being absorbed by plants and rain. Humans and animals alike consume plants as a food source. The effects MMW has on plants could leave us with food that's not safe to consume.

Think GMOs on steroids. The water that falls from the sky onto these plants will also be irradiated. A 2010 study on aspen seedlings showed that the exposure to radio frequencies led to the leaves showing necrosis symptoms.



Source: <https://www.hindawi.com/journals/ijfr/2010/83627>

Another [Armenian study](#) found that MMWs of low intensity “*invoke(s) peroxidase isoenzyme spectrum changes of wheat shoots.*” Peroxidase is a stress protein existing in plants. Indications are that 5G will be particularly harmful to plants – perhaps more so than to humans.

#9 – Effects on the Atmosphere and Depletion of Fossil Fuels

Implementation of the 5G global wireless network requires the launching of rockets to deploy satellites for 5G. These satellites have a short lifespan which would require a lot more deployment than what we’re currently seeing. A new type of hydrocarbon rocket engine expected to power a fleet of suborbital rockets would emit black carbon which “*could cause potentially significant changes in the global atmospheric circulation and distributions of ozone and temperature*” according to a 2010 [Californian study](#). Solid state rocket exhaust contains chlorine which also destroys the ozone.

The effects on the ozone are thought to be worse than current day CFC exposure.

Google’s Project Loon is said to bring Internet to rural and hard-to-access areas by using helium balloons. But these balloons only have a 10-month lifespan. We’re looking at a lot of helium being used here, more than what we can possibly have on Earth?

#10 – Disruption of the Natural Ecosystem

Since the year 2000, there have been reports of birds abandoning their nests as well as health issues like “*plumage deterioration, locomotion problems, reduced survivorship and death,*” says researcher Alfonso Balmori. Bird species that are affected by these low levels, non-ionizing microwave radiation are the House Sparrows, Rock Doves, White Storks, Collared Doves and Magpies, among others.

But it's not just the birds. The declining bee population is also said to be linked to this non-ionizing EMF radiation. It reduces the egg-laying abilities of the queen leading to a decline in colony strength.

A study conducted by Chennai's Loyola College in 2012 concluded that out of 919 research studies carried out on birds, plants, bees and other animals and humans, 593 of them showed impacts from RF-EMF radiations. 5G will be adding to the effects of this electrosmog.

#11 – Most 5G Studies Mis-Leading

5G will use pulsed millimeter waves to carry information. But as Dr. Joel Moskowitz points out, **most 5G studies are misleading because they do not pulse the waves.** This is important because research on microwaves already tells us how pulsed waves have more profound biological effects on our body compared to non-pulsed waves. Previous studies, for instance, show how pulse rates of the frequencies led to gene toxicity and DNA strand breaks.

Live Testing Already Begun

AT&T have announced the availability of their 5G Evolution in Austin, Texas. 5G Evolution allows Samsung S8 and S8 + users access to faster speeds. This is part of AT&T's plan to lay the 5G foundation while the standards are being finalized. AT&T has eyes on 19 other metropolitan areas such as Chicago, Los Angeles, Boston, Atlanta, San Francisco and so on. With Indianapolis to follow.

Charter, the second-largest cable operator in the US, has been approved for an experimental 28 GHz license in Los Angeles. The outdoor tests will use fixed transmitters with a 1 km or smaller effective radius.

Qualcomm has already demonstrated a 5G antenna system with about 27 decibel gain. According to ABI Research, is “*about 10 to 12 more db than a typical cellular base station antenna.*” Not a good sign.

Many more private sector companies such as HTC, Oracle, Sprint, T-Mobile are playing a role in the developing of testing platforms by contributing time, knowledge or money.

In the UK the 3.4GHz band has been earmarked for 5G use with contracts awarded to O2, Vodaphone, EE and Three. While the 2.3GHz band, awarded to O2, is likely to be used for 5G too in time.

Call to Action

Research and pre-testing is rampant by companies who are interested to tap into the lucrative waters of 5G. But few are willing to research its effects on health. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines remain essentially unchanged since 1998, not allowing for the recognition of radio frequency microwave radiation and MMWs as harmful unless there is a heating effect. But a few experts are speaking out.

DariuszLeszczynski from the University of Helsinki and also former member of the International Agency Research on Cancer is one of them. He has brought to attention to ICNIRP intention to classify skin as limbs. Limbs are paid lesser attention to when classifying exposure levels. Research indicates that MMWs affect the skin and the eyes the most. If skin is classified as a limb, this will pave the way for industry giants to introduce even higher exposures and put more people at risk.

The Global Union Against Radiation Deployment from Space (GUARD) addressed a letter to the FCC in September of 2016, bringing to their attention the harm 5G will inflict. GUARD warned the FCC that 5G violates Article 3 of The UN Declaration of Human Rights which states that “*everyone has the right to life, liberty and security of person.*” The document is laden with research, information and global support.

To learn how to write, call or email the relevant agencies to protest against the 5G deployment go here parentsforsafetechnology.org

What Experts are Saying

Here's what experts are saying about 5G:

"Along with the 5G there is another thing coming – Internet of Things. If you look at it combined the radiation level is going to increase tremendously and yet the industry is very excited about it.... they project 5G/IoT business to be a \$7 trillion business."

-Prof. Girish Kumar, Professor at Electrical Engineering Department at IIT Bombay

"The new 5G wireless technology involves millimeter waves (extremely high frequencies) producing photons of much greater energy than even 4G and WiFi. Allowing this technology to be used without proving its safety is reckless in the extreme, as the millimeter waves are known to have a profound effect on all parts of the human body."

-Prof. Trevor Marshall, Director Autoimmunity Research Foundation, California

"The plans to beam highly penetrative 5G milliwave radiation at us from space must surely be one of the greatest follies ever conceived of by mankind. There will be nowhere safe to live."

-Olga Sheean former WHO employee and author of 'No Safe Place'

"It would irradiate everyone, including the most vulnerable to harm from radiofrequency radiation: pregnant women, unborn children, young children, teenagers, men of reproductive age, the elderly, the disabled, and the chronically ill."

—Ronald Powell, PhD, Letter to FCC on 5G expansion

How To Protect Yourself From 5G

My 3 step approach for dealing with EMFs can be summarized as:

1. Understand your exposures. Understand the different types of EMFs and how they behave – hence the need to read (and share) articles like this one.
2. Measure – use an [EMF meter](#) to obtain readings and identify hotspots.
3. Mitigate your exposure. Which means either eliminate the source, move further away from the source of radiation or shield your body.

I recommend the same approach with 5G. There is a concern that current EMF meters are not able to measure the frequencies of MMWs. On this point, researcher Alasdair Philips from Powerwatch states "*current RF meters cover the frequency ranges proposed for most 5G use in the next three years*".

Endless Possibilities For The Future

5G may bring about a new form of industrial revolution, human connectivity and even a new reality. It offers endless possibilities for the future.

We do need more research. But already what is clear, as the research I've shared here indicates, is that there are real dangers.

Which is why it even more important to take action to protect yourself and your loved ones. Please share this article with your friends and family.

Sources include:

A 5G Wireless Future – Dr. Cindy Russell

Latest on 5G Spectrum – EMFields Solutions Ltd

IJMTER ISSN (online) 2349 – 9745 Evolution of Mobile Generation Technology: 1G to 5G and Review of Upcoming Wireless Technology 5G by Lopa J. Vora

<https://5g.co.uk/news/5g-spectrum-auction-results/4336/>

<https://www.radiomagonline.com/trends/at-t-charter-experimenting-in-los-angeles-with-5g-using-28-ghz-spectrum>

Speed Over Safety: The Perilous 5G Network

By Ty Bollinger

November 12, 2018

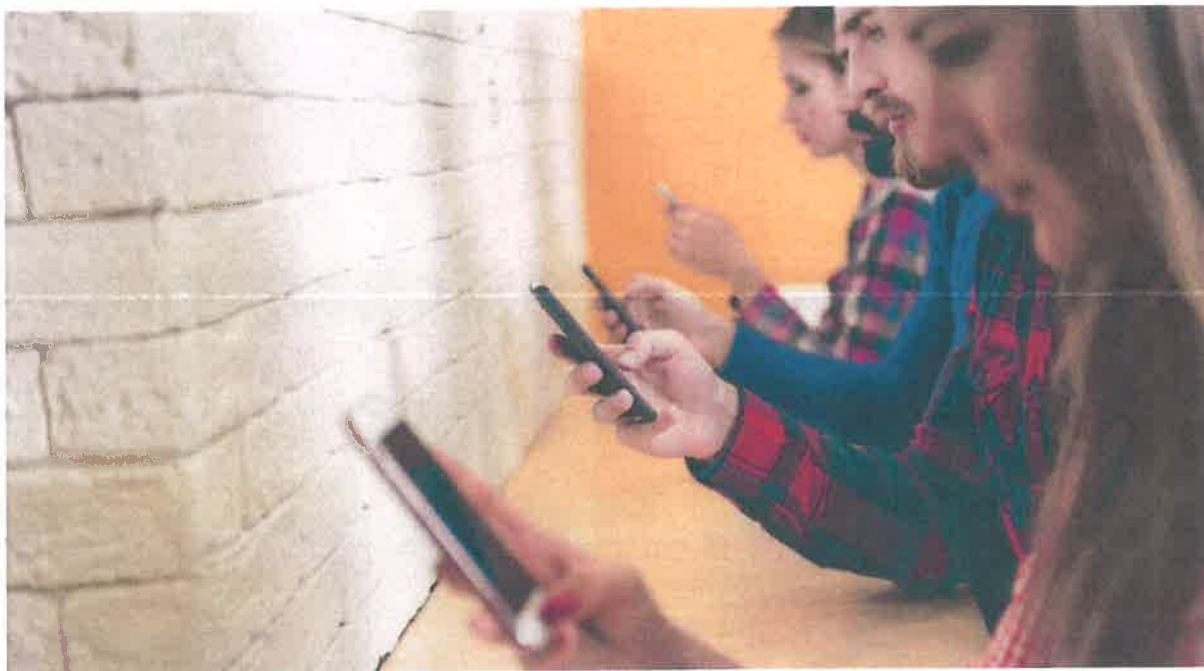
3,705 Facebook Shares

[Tweet](#)

[Share4K](#)

[Pin25](#)

4K_{SHARES}



Most Americans today are constantly connected to the world of digital information via smartphones and other mobile devices. An estimated 95% own a cell phone of some kind, while 77% own a smartphone – which currently operates on 4G technology.^{1,2}

According to tech experts, at least a hundred telecom operators all over the world are preparing to make the switch to 5G technology, which is expected to be fully rolled out by 2020. It will be needed to run the **28 billion devices** estimated to be online by 2021.² Before we proceed, let's understand what all these "Gs" mean and what 5G is designed to do.

What is 5G and What Will It Do?

The “G” in 3G, 4G, and 5G stands for “generation.” The first wireless phone technology marked the appearance of the first generation. Later, 2G started when people were able to send text messages between their phones.

The advent of 3G allowed people to make calls, text, and browse the internet using their phones, while 4G provided faster wireless access and better connectivity. Long-term evolution (LTE) gave 4G even better access and faster speeds.

5G has been designed to vastly expand upon the 4G LTE technology to significantly increase storage capacity, along with boosting connection and browsing speeds.

Currently, wireless companies are mostly still in the testing and prototype stages when it comes to 5G technology. However, 5G is already being rolled out in several test cities, including Sacramento, Washington DC, Atlanta, Dallas, Miami, and New York.³

According to Verizon, when it finally materializes, 5G will provide “**about 50 times the throughput of current 4G LTE**, latency in the single milliseconds” and will be able to “handle exponentially more Internet-connected devices” which should “accommodate the [...] explosion of the Internet of Everything”.²

5G technology is expected to have positive effects on customer support, worker productivity, and product quality. Gamers, who depend on the high-performance connections needed for gaming on mobile networks, are also going to love 5G.

5G is also likely to have a huge impact on the so-called “Internet of Things” – the network of physical devices, vehicles, and home appliances containing the electronics and software that will allow them to efficiently connect with each other, along with collecting and exchanging information.

There is no doubt that when 5G does roll out, it will lead to a dramatic surge in cell phone usage, the number of transmitters, as well as the number and variety of Internet-enabled devices.

This is very exciting from a technological standpoint, but what does 5G mean for our health and wellbeing – especially given that exposure to radiation equivalent to that of a cell phone tower **has already been shown to cause cancer** in mice in laboratory experiments?⁴



Let's look at how 5G will be deployed to understand the effects they are likely to have on our health.

How Will 5G be Deployed?

To enable 5G deployment, wireless providers will use submillimeter and millimeter waves in frequency ranges above 6 GHz to 100 GHz and beyond, so that much more data can be transmitted in the same amount of time.^{3,5}

However, these high-frequency waves can't carry data very far. To use them, wireless companies will have to build a massive infrastructure of literally thousands of small transmitters to increase signal range and capacity. It is estimated that a transmitter will need to be placed every two to ten homes apart.³

Why should we be concerned about this?

Non-ionizing electromagnetic fields (EMFs) are generated by devices that emit radiofrequency radiation (RF), including cell phones, cordless phones and their base stations, **Wi-Fi, broadcast antennas, smart meters**, and even baby monitors. Electronic devices and infrastructures used to deliver electricity that generate extremely-low frequency electromagnetic fields also produce EMF.

Proximity to these devices, **cell phone towers, and transmitters increases our risk of adverse health effects** because of EMF exposure. **The massive increase in transmitters required to enable 5G deployment means that it may become impossible to avoid exposure.**



Despite community protests and municipal litigation, many state governments – along with the federal government – want to allow 5G transmitters to be installed in front of homes without the consent of the owners.⁶

The prospect of so many transmitters emitting radiation has alarmed health experts who are rightly concerned about their potential adverse effects on our health, especially considering the preliminary findings from a federal government study.⁷

5G Deployment Will Lead to Higher RF Levels than with 3G & 4G

Documents show that companies are aware that deploying 5G will lead to higher levels of harmful radiofrequency radiation in the vicinity of the 5G

transmitters, relative to 3G and 4G.⁸ According to a senior expert in the field of EMF and Health at Ericsson Research, the proposed 5G network roll-out will present difficult challenges – such as more complex EMF compliance assessments and site design requirements, along with larger EMF exclusion zones.⁸

Countries such as China, India, Poland, Russia, Italy, and Switzerland have lower radiation limits than the U.S. So far, they have refused to allow 5G deployment, as the accompanying increase in radiation levels would exceed those limits.

According to Ericsson, if the national EMF limit for a given country is one-tenth of the international standard limit proposed in 1998 by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)⁹ the size of the exclusion zone would make the roll-out “very challenging”. If the national limit was one-hundredth that of the ICNIRP limit, the size of the exclusion zone would seemingly make the 5G roll-out “a major problem or impossible”.

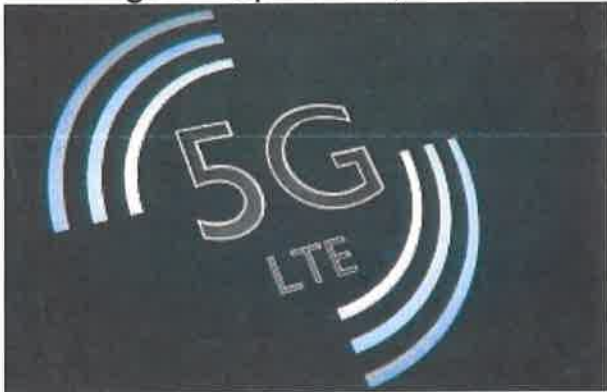
Will 5G Affect our Health?

Before we discuss the health ramifications of 5G, consider this: published, peer-reviewed, scientific evidence indicates that even the current wireless technologies of lead to radiofrequency exposures which pose a serious health risk to humans, animals, plants, and the environment.³

For instance, wireless frequencies in the millimeter and submillimeter range have been shown to interact directly with our skin, specifically sweat glands. Our skin is our largest organ. The ICNIRP, while developing recommendations for public exposure limits, appears to be planning to classify our skin as an extremity. In other words, our skin would be categorized as belonging to our limbs rather than head or torso, permitting it to be exposed to more radiation than would otherwise be allowed.³

In her report “A 5G Wireless Future: Will it give us a Smart Nation or Contribute to an Unhealthy One?” Dr. Cindy Russell raises further concerns about the basic safety of currently used wireless technologies.¹⁰ She points out that the proposed **5G frequencies have not been tested for short- or long-term safety.**

Based on a 1998 review of dozens of studies,¹¹ Dr. Russell’s report explains the science behind electro-sensitivity and the biological harm caused by EMFs. It further details the many adverse effects of 5G’s frequencies – including arrhythmias, heart rate variability, bacterial effects, antibiotic resistance, immune system effects, chromatin effects, teratogenic effects, altered gene expression, and cataracts.^{10,11}



Dr. Russell warns: “The possibility of induction of adverse health effects by a local, low-intensity MMW (millimeter wave) irradiation is of potential significance for setting health and safety standards and requires special attention.”

To protect public health, Dr. Russell recommends the following steps, among others:

- Rolling out 5G technologies only after completion of studies on their health impact

- Creating an independent, multidisciplinary agency to develop safety regulations, premarket testing, and research needs in a transparent environment with public input
- Labeling EMF information on devices along with appropriate precautionary warnings.

EMFs have also been shown to trigger oxidative stress,¹⁰ defined as an imbalance between free radicals and reactive oxygen species and their elimination by protective mechanisms, known as antioxidants. **This imbalance is known to trigger many acute and chronic diseases.**

The World Health Organization (WHO) currently classifies EMFs associated with RF as “possibly carcinogenic to humans”.^{3,5} However, according to a recent monograph published in the journal *Environmental Research*, mobile phone use is associated with an increased risk of brain, vestibular nerve, and salivary gland tumors, along with a possible higher risk of breast, testicular, and thyroid cancers.¹²

Based on this evidence, the authors of the monograph recommend that IARC’s current categorization of RFR as a possible human carcinogen should be upgraded to Carcinogenic to Humans.

EMFs can seriously compromise our health. Unfortunately, because this is the first generation that will be exposed from birth to such high levels of man-made radio frequencies, it will be years or even decades before the full health consequences are known.

For these reasons, many experts strongly recommend that research on the effects of 5G on human health be carried out and existing exposure limits be both re-examined and revised to ensure that both people and the environment are protected.

For instance, Dr. Russell calls the RF wavelengths to which we are currently exposed “*a toxin to biological systems*” and recommends a moratorium on

5G deployment, along with creating independent health and environmental advisory boards containing members with specific expertise in the biological effects of RF exposure.¹³

The National Toxicology Program Studies

The FDA nominated the National Toxicology Program (NTP) to study cell phone RF exposure because, as we have already seen, most Americans use them. Further, current safety guidelines seek only to protect users from acute injury because of the heat cell phones generate, while not much is known about the potential health effects of long-term exposure to cell phone radiation. Some human studies have shown limited evidence of an increased risk of cancer from cell phone use.

For these studies, rats were exposed to 2G and 3G frequencies of 900 and 1900 megahertz – which are currently used in voice calls and texting in the U.S. – for a total of just over 9 hours a day, for 10-minute on, 10-minute off increments. Partial findings, reported in May 2016, revealed that the brains and hearts of **male rats developed low incidences of tumors.**⁷ **Tumors in other locations have been reported in both male and female rats, but these results are not yet considered conclusive.**¹⁴



The complete results of these studies, expected later in 2018 or early 2019, will help the federal government better understand the health risks of exposure to cell phone radiation and are likely play an important role in determining future governmental policies regarding cell phone usage safety.

An Extraordinary Appeal

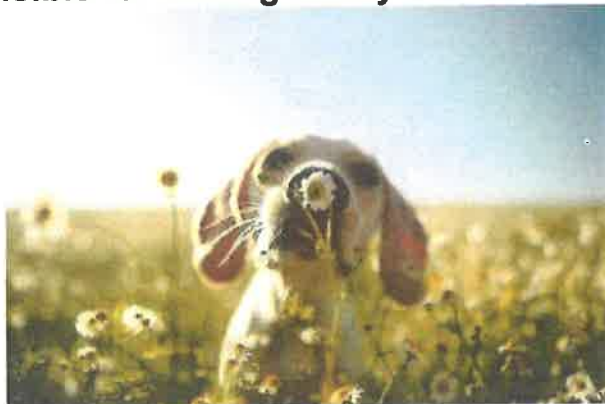
The December 2015 issue of the *European Journal of Oncology* contains an extraordinary document known as the “International EMF Scientist Appeal”, in which over 240 scientists from 40 nations – who are themselves actively engaged in the study of biological and health effects of non-ionizing EMF – have issued a statement to the effect that that the overall weight of evidence reported in peer-reviewed, scientific studies strongly supports greater precautionary measures be taken to reduce or eliminate exposure.¹⁵

This appeal has been submitted to the UN, the WHO, and the UN Environmental Program, and to all UN Member Nations.

The opening paragraph states:

Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life.”

According to the scientists who drafted this appeal, **the agencies responsible for setting safety standards have**



failed

to create and enforce proper

guidelines to protect our health and wellbeing – particularly children, who are more susceptible to EMF.

For instance, in 1998 the ICNIRP published the “Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz)”.⁹ These guidelines are accepted by the WHO and many countries. In fact, the WHO has called for all nations to adopt these guidelines to encourage global standardization of EMF safety standards.

In 2009, the ICNIRP released a statement saying that it was reaffirming its 1998 guidelines, since apparently the scientific literature published since that time “has provided no evidence of any adverse effects below the basic restrictions and does not necessitate an immediate revision of its guidance on limiting exposure to high frequency electromagnetic fields”.¹⁶

Over 240 scientists who signed the appeal disagree strongly with the ICNIRP. They assert that growing scientific evidence contradicts ICNIRP’s claims – in other words, that these guidelines are insufficient to protect public health.

The WHO adopted the IARC classification of extremely low frequency electromagnetic fields in 2002 and RF in 2011. According to this classification, EMF is a possible human carcinogen, as we have noted before. Despite this, the WHO maintains that there is insufficient evidence to justify lowering EMF exposure limits.

The signees of the appeal have recommended that the United Nations Environmental Programme (UNEP) fund an independent multidisciplinary committee to explore alternative options to lower human exposure to RF and extremely low frequency electromagnetic fields.

The signees further state that although it is essential that the industry be involved and cooperate in this process, they should be prevented from influencing its processes or conclusions in any way.

Finally, the signees of this document have also collectively requested that steps be taken to:

- Protect children and pregnant women
- Strengthen guidelines and regulatory standards
- Encourage manufacturers to develop safer technology
- Maintain adequate power quality and ensure proper electrical wiring in utilities responsible for the generation, transmission, distribution, and monitoring of electricity to minimize harmful ground current
- Fully inform the public about the potential health risks from electromagnetic energy and teach harm reduction strategies
- Educate medical professionals about the biological effects of electromagnetic energy and train them to treat patients with electromagnetic sensitivity
- Persuade governments to fund training and research on electromagnetic fields and health independently of industry, while mandating industry cooperation with researchers
- Ensure that media disclose experts' financial relationships with industry when citing their opinions regarding health and safety aspects of EMF emitting technologies
- Establish radiation-free areas, known as white zones.

What Can You Do to Reduce Your Exposure to EMFs and Dirty Electricity?

As we have seen, many experts are concerned about the health effects of the proposed massive increase in transmitters needed for 5G deployment and are working to protect us from their harmful effects. In the meantime, **we need to protect ourselves** as much as possible while we wait for existing exposure

limits to be revised. Here are a few recommendations for lowering or eliminating exposure to harmful EMFs and dirty electricity:^{17,18}

1. Keep all devices in another room at night. Carry them in a bag instead of in clothing
2. Try to have phone conversations on a landline instead of putting your cell phone up to your head for long periods of time
3. Headphones and chargers can increase EMF exposure from cell phones – so don't use them while they're charging
4. Avoid traditional headsets. Instead, opt for air tube headsets, which deliver great sound without EMF exposure
5. Putting your cell phone on airplane mode stops connectivity with the towers, minimizing radiation exposure
6. Get rid of electric blankets, waterbeds, and electric heating pads
7. Use a quality shielding phone case that is designed to block various forms of radiation.
8. Purchase shielded, grounded extension cords and power cords for home use
9. Change your bedroom circuit breaker to exclude smoke detectors, alarms, etc. and then switch off the circuit breaker at night
10. Use battery-powered alarm clocks
11. Leave at least eight inches of space between your bed and your wall. Wiring (even in walls) can emit a significant magnetic field
12. Position your bed so that it's as far away as possible from strong magnetic field sources, including the utility pole, refrigerator, and home entertainment center
13. Forget about Bluetooth headsets. Use speaker mode to keep your phone as far away from your body as possible

14. If you're using a laptop at home, avoid Wi-Fi and opt for hard-wired Ethernet connections
15. Purchase a radio frequency meter, which will allow you to pinpoint EMF hotspots
16. Reduce or eliminate dimmer switches, wireless products, printers, scanners, computers, television sets, and other energy-saving devices.

Find the most powerful, little-known ways to fight cancer and live a long, healthy life from the world's leading experts in [The Truth About Cancer: A Global Quest](#) docu-series!

[\[+\] Sources and References](#)

[\[-\] Sources and References](#)

- [1. Pew Research Center: Mobile Fact Sheet](#)
- [2. The 5G Revolution Is Coming — What to Know Before It's Here](#)
- [3. 5G And The IOT: Scientific Overview Of Human Health Risks](#)
- [4. New Research Confirms Carcinogenic Side Effects of Cell Phone Radiation](#)
- [5. Towards 5G communication systems: Are there health implications?](#)
- [6. City joins litigation against state law](#)
- [7. National Toxicology Program: Cell Phones – Research Overview](#)
- [8. Impact of EMF limits on 5G network roll-out](#)
- [9. Guidelines For Limiting Exposure To Time-Varying Electric, Magnetic, and Electromagnetic Fields \(up to 300 GHz\)](#)
- [10. A 5G Wireless Future: Will it give us a Smart Nation or Contribute to an Unhealthy One?](#)
- [11. Current state and implications of research on biological effects of millimeter waves: a review of the literature](#)
- [12. Cancer epidemiology update, following the 2011 IARC evaluation of radiofrequency electromagnetic fields \(Monograph 102\)](#)
- [13. 5 G wireless telecommunications expansion: Public health and environmental implications](#)
- [14. Toxicology and Carcinogenesis Studies in Hsd Sprague Dawley SD Rats Exposed to Whole-Body Radio Frequency Radiation at a Frequency \(900 MHz\) and Modulations \(GSM and CDMA\) Used by Cell phones](#)

- [15. International Appeal: Scientists call for protection from non-ionizing electromagnetic field exposure](#)
- [16. ICNIRP Statement on the Guidelines For Limiting Exposure To Time-Varying Electric, Magnetic, and Electromagnetic Fields \(up to 300 GHz\)](#)
- [17. 17 Ways to Minimize Exposure to Dirty Electricity & EMFs](#)
- [18. 5G Towers May Pose New Health Risk](#)

California State Senate

STATE CAPITOL
ROOM 3076
SACRAMENTO, CA 95814

(916) 651-4034

WWW.SENATE.CA.GOV/UMBERG
SENATOR.UMBERG@SENATE.CA.GOV

SENATOR
THOMAS J. UMBERG

THIRTY-FOURTH SENATE DISTRICT



COMMITTEES
ELECTIONS AND
CONSTITUTIONAL AMENDMENTS
CHAIR
BUDGET AND FISCAL REVIEW
HOUSING
JUDICIARY
TRANSPORTATION
VETERANS AFFAIRS
BUDGET SUBCOMMITTEE #4

March 15, 2019

Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Dear Harbor Commissioners,

I write today to request that the Los Angeles Board of Harbor Commissioners hold over the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. Before a decision is made by this Board that will allow APMT Maersk to transition to a fully automated terminal, I would like to see a comprehensive impact analysis that includes, among other things, the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses, and families in my district.

I have supported, and will continue to support, funding for our ports to upgrade to equipment that is good for our environment. I support the purchase of zero or near-zero emission equipment that is operated by a human. I believe we can improve the environment while supporting and maintaining well-paying jobs and a strong workforce. I worry that displacing hundreds of jobs will negatively impact the communities surrounding the Southern California ports and beyond.

I urge the Los Angeles Harbor Commission do its due diligence on the potential for negative impacts to the surrounding communities.

I respectfully request that you take action to stay this permit. A deeper look into the negative impacts of this transition is necessary to protect the workers and communities who contribute to making California the fifth largest economy in the world.

Sincerely,

A handwritten signature in black ink that reads "T. Umberg".

THOMAS J. UMBERG
Senator, 34th District

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0064
(916) 319-2064
FAX (916) 319-2164

E-MAIL
Assemblymember.Gipson@assembly.ca.gov

Assembly California Legislature



MIKE A. GIPSON
DEMOCRATIC CAUCUS CHAIR
ASSEMBLYMEMBER, SIXTY-FOURTH DISTRICT

COMMITTEES
BUSINESS AND PROFESSIONS
GOVERNMENTAL ORGANIZATION
HUMAN SERVICES
INSURANCE
TRANSPORTATION

March 15, 2019

Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Re: Level 1 Coastal Development Permit No. 18-25

Dear Harbor Commissioners:

I am writing to request that the Los Angeles Board of Harbor Commissioners hold-over the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. Before a decision is made by this Board that will allow APMT Maersk to transition to a fully automated terminal, there must be a comprehensive impact analysis that must consider the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses and families in my district.

I have supported funding for ports to upgrade to equipment that is good for our environment. I support the purchase of zero or near zero emission equipment that is operated by a human. We can improve the environment while supporting and maintaining well-paying jobs and a strong working force. Displacing hundreds of jobs will certainly impact the communities surrounding the Southern California ports and beyond. The Los Angeles Harbor Commission must do its due diligence on the potential for negative impacts to the surrounding communities.

We respectfully request that you take action to stay this permit. A deeper look into the negative impacts of this transition is necessary to protect the workers and communities who contribute to make California the fifth largest economy in the world. If you have any questions, I welcome you to reach out to my chief of staff, Jay Jefferson, at (916) 319-2064 or via email at jay.jefferson@asm.ca.gov.

Sincerely,


MIKE A. GIPSON
Assemblymember, 64th AD

DISTRICT OFFICES: 879 W. 190TH STREET, SUITE 920 • GARDENA, CA 90248 • (310) 324-6408 • FAX (310) 324-6485
205 S. WILLOWBROOK AVENUE • COMPTON, CA 90220 • (310) 605-5557 • FAX (310) 324-6408

CAPITOL OFFICE
STATE CAPITOL, ROOM 4052
SACRAMENTO, CA 95814
(916) 651-4022

DISTRICT OFFICE
100 SOUTH VINCENT AVENUE
SUITE 401
WEST COVINA, CA 91790
(626) 430-2499

WWW.SENATE.CA.GOV/RUBIO
SENATOR.RUBIO@SENATE.CA.GOV

California State Senate

SENATOR
SUSAN RUBIO
TWENTY-SECOND SENATE DISTRICT

STANDING COMMITTEES
INSURANCE, CHAIR
ENERGY, UTILITIES, COMMUNICATIONS
GOVERNMENTAL ORGANIZATION
HEALTH
TRANSPORTATION

SELECT COMMITTEE
CALIFORNIA MEXICO COOPERATION



March 15, 2019

The Honorable Jaime L. Lee
President
Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Dear Board President Lee:

I write to you regarding the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. There are several important factors concerning this permit that merit your Board's consideration and request that the Board hold-over its decision to approve.

First, the Board should consider the impact on the workforce at the port and the regional economy. Before allowing APMT Maersk to transition to a fully automated terminal, the Board should conduct a comprehensive impact analysis that considers the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses and families in the region. For port workers, the hard work they put day in and day out to make California the fifth largest economy in the world is also the work that feeds their families and keeps their communities strong.

In regards to environmental improvements, I support the purchase of zero or near zero emission equipment for ports that is operated by a human. We can improve the environment while maintaining well-paying jobs and a strong working force. Displacing hundreds of jobs will certainly impact the communities surrounding the ports and beyond. In particular, I am concerned people of color will be displaced of well-paying jobs that cannot be replaced.

Lastly, it is important to highlight that maintaining a workforce of hard working individuals does not sacrifice efficiency at the port. For example, the Port of Los Angeles broke its all-time record, moving more cargo in 2018 than any time in its 111-year history. This means racking up 9,458,749 twenty-foot equivalent units, or 1.2 percent more than previous 2017's record breaking year.

As the busiest port in the Western Hemisphere and premier gateway for international commerce in the country, it is critically important the Port of Los Angeles does not become a hollow pass-through for the massive transfer of goods and wealth without any benefit to the families and

communities that surround or are impacted by the port. As a result, it is vital for the Los Angeles Harbor Commission to study and consider the potential for negative impacts to the hard working men and women at the port, as well as surrounding communities and local economy.

For these reasons I respectfully request that you take action to stay this permit. Thank you for your time and consideration.

Sincerely

A handwritten signature in cursive script that reads "Susan Rubio". The signature is written in black ink and is positioned above the printed name and title.

Susan Rubio
State Senator, 22nd District

SR:ga

CAPITOL OFFICE
STATE CAPITOL, ROOM 4052
SACRAMENTO, CA 95814
(916) 651-4022

DISTRICT OFFICE
100 SOUTH VINCENT AVENUE
SUITE 401
WEST COVINA, CA 91790
(626) 430-2499

WWW.SENATE.CA.GOV/RUBIO
SENATOR.RUBIO@SENATE.CA.GOV

California State Senate

SENATOR
SUSAN RUBIO
TWENTY-SECOND SENATE DISTRICT

STANDING COMMITTEES
INSURANCE, CHAIR
ENERGY, UTILITIES, COMMUNICATIONS
GOVERNMENTAL ORGANIZATION
HEALTH
TRANSPORTATION

SELECT COMMITTEE
CALIFORNIA MEXICO COOPERATION



March 15, 2019

The Honorable Diane Middleton
Commissioner
Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Dear Commissioner Middleton:

I write to you regarding the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. There are several important factors concerning this permit that merit your Board's consideration and request that the Board hold-over its decision to approve.

First, the Board should consider the impact on the workforce at the port and the regional economy. Before allowing APMT Maersk to transition to a fully automated terminal, the Board should conduct a comprehensive impact analysis that considers the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses and families in the region. For port workers, the hard work they put day in and day out to make California the fifth largest economy in the world is also the work that feeds their families and keeps their communities strong.

In regards to environmental improvements, I support the purchase of zero or near zero emission equipment for ports that is operated by a human. We can improve the environment while maintaining well-paying jobs and a strong working force. Displacing hundreds of jobs will certainly impact the communities surrounding the ports and beyond. In particular, I am concerned people of color will be displaced of well-paying jobs that cannot be replaced.

Lastly, it is important to highlight that maintaining a workforce of hard working individuals does not sacrifice efficiency at the port. For example, the Port of Los Angeles broke its all-time record, moving more cargo in 2018 than any time in its 111-year history. This means racking up 9,458,749 twenty-foot equivalent units, or 1.2 percent more than previous 2017's record breaking year.

As the busiest port in the Western Hemisphere and premier gateway for international commerce in the country, it is critically important the Port of Los Angeles does not become a hollow pass-through for the massive transfer of goods and wealth without any benefit to the families and

communities that surround or are impacted by the port. As a result, it is vital for the Los Angeles Harbor Commission to study and consider the potential for negative impacts to the hard working men and women at the port, as well as surrounding communities and local economy.

For these reasons I respectfully request that you take action to stay this permit. Thank you for your time and consideration.

Sincerely

A handwritten signature in cursive script that reads "Susan Rubio". The signature is written in black ink and is positioned above the printed name and title.

Susan Rubio
State Senator, 22nd District

SR:ga

CAPITOL OFFICE
STATE CAPITOL, ROOM 4052
SACRAMENTO, CA 95814
(916) 651-4022

DISTRICT OFFICE
100 SOUTH VINCENT AVENUE
SUITE 401
WEST COVINA, CA 91790
(626) 430-2499

WWW.SENATE.CA.GOV/RUBIO
SENATOR.RUBIO@SENATE.CA.GOV

California State Senate

SENATOR
SUSAN RUBIO

TWENTY-SECOND SENATE DISTRICT

STANDING COMMITTEES
INSURANCE, CHAIR
ENERGY, UTILITIES, COMMUNICATIONS
GOVERNMENTAL ORGANIZATION
HEALTH
TRANSPORTATION

SELECT COMMITTEE
CALIFORNIA MEXICO COOPERATION



March 15, 2019

The Honorable Edward Renwick
Commissioner
Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Dear Commissioner Renwick:

I write to you regarding the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. There are several important factors concerning this permit that merit your Board's consideration and request that the Board hold-over its decision to approve.

First, the Board should consider the impact on the workforce at the port and the regional economy. Before allowing APMT Maersk to transition to a fully automated terminal, the Board should conduct a comprehensive impact analysis that considers the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses and families in the region. For port workers, the hard work they put day in and day out to make California the fifth largest economy in the world is also the work that feeds their families and keeps their communities strong.

In regards to environmental improvements, I support the purchase of zero or near zero emission equipment for ports that is operated by a human. We can improve the environment while maintaining well-paying jobs and a strong working force. Displacing hundreds of jobs will certainly impact the communities surrounding the ports and beyond. In particular, I am concerned people of color will be displaced of well-paying jobs that cannot be replaced.

Lastly, it is important to highlight that maintaining a workforce of hard working individuals does not sacrifice efficiency at the port. For example, the Port of Los Angeles broke its all-time record, moving more cargo in 2018 than any time in its 111-year history. This means racking up 9,458,749 twenty-foot equivalent units, or 1.2 percent more than previous 2017's record breaking year.

As the busiest port in the Western Hemisphere and premier gateway for international commerce in the country, it is critically important the Port of Los Angeles does not become a hollow pass-through for the massive transfer of goods and wealth without any benefit to the families and

communities that surround or are impacted by the port. As a result, it is vital for the Los Angeles Harbor Commission to study and consider the potential for negative impacts to the hard working men and women at the port, as well as surrounding communities and local economy.

For these reasons I respectfully request that you take action to stay this permit. Thank you for your time and consideration.

Sincerely

A handwritten signature in cursive script that reads "Susan Rubio". The signature is written in black ink and is positioned above the typed name and title.

Susan Rubio
State Senator, 22nd District

SR:ga

CAPITOL OFFICE
STATE CAPITOL, ROOM 4052
SACRAMENTO, CA 95814
(916) 851-4022

DISTRICT OFFICE
100 SOUTH VINCENT AVENUE
SUITE 401
WEST COVINA, CA 91790
(626) 430-2499

WWW.SENATE.CA.GOV/RUBIO
SENATOR.RUBIO@SENATE.CA.GOV

California State Senate

SENATOR
SUSAN RUBIO

TWENTY-SECOND SENATE DISTRICT



STANDING COMMITTEES
INSURANCE, CHAIR
ENERGY, UTILITIES, COMMUNICATIONS
GOVERNMENTAL ORGANIZATION
HEALTH
TRANSPORTATION

SELECT COMMITTEE
CALIFORNIA MEXICO COOPERATION

March 15, 2019

The Honorable Lucia Moreno-Linares
Commissioner
Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Dear Commissioner Moreno-Linares:

I write to you regarding the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. There are several important factors concerning this permit that merit your Board's consideration and request that the Board hold-over its decision to approve.

First, the Board should consider the impact on the workforce at the port and the regional economy. Before allowing APMT Maersk to transition to a fully automated terminal, the Board should conduct a comprehensive impact analysis that considers the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses and families in the region. For port workers, the hard work they put day in and day out to make California the fifth largest economy in the world is also the work that feeds their families and keeps their communities strong.

In regards to environmental improvements, I support the purchase of zero or near zero emission equipment for ports that is operated by a human. We can improve the environment while maintaining well-paying jobs and a strong working force. Displacing hundreds of jobs will certainly impact the communities surrounding the ports and beyond. In particular, I am concerned people of color will be displaced of well-paying jobs that cannot be replaced.

Lastly, it is important to highlight that maintaining a workforce of hard working individuals does not sacrifice efficiency at the port. For example, the Port of Los Angeles broke its all-time record, moving more cargo in 2018 than any time in its 111-year history. This means racking up 9,458,749 twenty-foot equivalent units, or 1.2 percent more than previous 2017's record breaking year.

As the busiest port in the Western Hemisphere and premier gateway for international commerce in the country, it is critically important the Port of Los Angeles does not become a hollow pass-through for the massive transfer of goods and wealth without any benefit to the families and

communities that surround or are impacted by the port. As a result, it is vital for the Los Angeles Harbor Commission to study and consider the potential for negative impacts to the hard working men and women at the port, as well as surrounding communities and local economy.

For these reasons I respectfully request that you take action to stay this permit. Thank you for your time and consideration.

Sincerely

A handwritten signature in cursive script that reads "Susan Rubio". The signature is written in black ink and is positioned above the typed name and title.

Susan Rubio
State Senator, 22nd District

SR:ga

CAPITOL OFFICE
STATE CAPITOL, ROOM 4052
SACRAMENTO, CA 95814
(916) 651-4022

DISTRICT OFFICE
100 SOUTH VINCENT AVENUE
SUITE 401
WEST COVINA, CA 91790
(626) 430-2499

WWW.SENATE.CA.GOV/RUBIO
SENATOR.RUBIO@SENATE.CA.GOV

California State Senate

SENATOR
SUSAN RUBIO
TWENTY-SECOND SENATE DISTRICT



STANDING COMMITTEES
INSURANCE, CHAIR
ENERGY, UTILITIES, COMMUNICATIONS
GOVERNMENTAL ORGANIZATION
HEALTH
TRANSPORTATION

SELECT COMMITTEE
CALIFORNIA MEXICO COOPERATION

March 15, 2019

The Honorable Anthony Pirozzi, Jr.
Commissioner
Los Angeles Board of Harbor Commissioners
425 S. Palos Verdes Street,
San Pedro, California 90731

Dear Commissioner Pirozzi:

I write to you regarding the Level 1 Coastal Development Permit No. 18-25: APM Terminals-Landside Infrastructure to Operate Battery-Electric Powered Equipment. There are several important factors concerning this permit that merit your Board's consideration and request that the Board hold-over its decision to approve.

First, the Board should consider the impact on the workforce at the port and the regional economy. Before allowing APMT Maersk to transition to a fully automated terminal, the Board should conduct a comprehensive impact analysis that considers the number of jobs that will be lost and the potentially devastating impact to the neighborhoods, businesses and families in the region. For port workers, the hard work they put day in and day out to make California the fifth largest economy in the world is also the work that feeds their families and keeps their communities strong.

In regards to environmental improvements, I support the purchase of zero or near zero emission equipment for ports that is operated by a human. We can improve the environment while maintaining well-paying jobs and a strong working force. Displacing hundreds of jobs will certainly impact the communities surrounding the ports and beyond. In particular, I am concerned people of color will be displaced of well-paying jobs that cannot be replaced.

Lastly, it is important to highlight that maintaining a workforce of hard working individuals does not sacrifice efficiency at the port. For example, the Port of Los Angeles broke its all-time record, moving more cargo in 2018 than any time in its 111-year history. This means racking up 9,458,749 twenty-foot equivalent units, or 1.2 percent more than previous 2017's record breaking year.

As the busiest port in the Western Hemisphere and premier gateway for international commerce in the country, it is critically important the Port of Los Angeles does not become a hollow pass-through for the massive transfer of goods and wealth without any benefit to the families and communities that surround or are impacted by the port. As a result, it is vital for the Los Angeles

communities that surround or are impacted by the port. As a result, it is vital for the Los Angeles Harbor Commission to study and consider the potential for negative impacts to the hard working men and women at the port, as well as surrounding communities and local economy.

For these reasons I respectfully request that you take action to stay this permit. Thank you for your time and consideration.

Sincerely

A handwritten signature in cursive script that reads "Susan Rubio". The signature is written in black ink and is positioned above the printed name and title.

Susan Rubio
State Senator, 22nd District

SR:ga
